Southern California Regional Energy Network

2013-2014 Energy Efficiency Portfolio

Southern California Regional Energy Network (SoCalREN) Program Implementation Plan

February 14, 2014

TABLE OF CONTENTS

This page intentionally left blank.

2013-2014 Energy Efficiency Programs
Southern California Regional Energy Network
Program Implementation Plan

1) Program Name: Southern California Regional Energy Network

Program Description (general): The Southern California Regional Energy Network (SoCalREN) is a pilot project offering "one-stop" energy services to counties and cities in the SCE/SCG ("IOU") service territories. It will provide services for residential, commercial and municipal building retrofits; financing programs; implementation of energy/climate action plan projects through collective procurement and contracting for services; and community engagement for behavior change.

The SoCalREN addresses the compelling need of local governments to receive technical support, resources, tools, templates, expertise, and access to financing that will enable them to cost effectively implement integrated energy management strategies. As a peer driven-organization where local governments will learn from one another, the SoCalREN will expand the number of local governments participating in energy efficiency programs. SoCalREN services will be available to the over 190 cities and unincorporated areas in IOU service territories, comprising 40% of the cities in California.

The SoCalREN *complements and supplements* the services of existing LGP partnerships. It does so by offering services that are either not able to be offered by IOU's (i.e. joint procurement, energy project management services) or are delivered in concert with IOU program offerings (i.e. supplemental marketing and contractor training through Energy Upgrade California). The SoCalREN aggregates and supports local government projects and increases their scope and depth through improved financing, joint procurement, more comprehensive project development services and open source best practices.

The SoCalREN also fills the resource gap for cities not participating in LGP's by providing them with its energy management services. Nearly half of the local governments in the IOU territories are not members of LGPs and do not have access to the expertise or resources to design and implement

comprehensive energy efficiency programs on their own. The SoCalREN offers an essential resource to provide these communities with the necessary credibility, leadership, support and collective strategy that will drive significant energy savings.

The SoCalREN provides an effective platform for local government energy programs that require regional consistency and scale. It offers opportunities for local governments to jointly participate in bundled procurement and contracting and financing services to reduce cost, save time and leverage resources. By harnessing the collective energy actions of local governments and leveraging existing and emerging resources, the SoCalREN will enable more communities to benefit from deeper, more cost-effective energy efficiency savings than are currently achieved by LGP's alone.

The SoCal REN pilot directly supports the goals of the California Energy Efficiency Strategic Plan. CEESP Goal 5 seeks to support actions that enable "energy efficiency expertise to become widespread and typical in local governments," and support efforts that "will build significant additional local government capacity to design, implement and manage comprehensive energy solutions within their communities."

The SoCalREN offers services in the following three key program areas: *Energy Upgrade California, Financing, and the Southern California Regional Energy Center.*

Energy Upgrade California. The SoCalREN will build on the accomplishments of Energy Upgrade California (EUC) in Los Angeles County by expanding it to all interested participants in SCE's and SCG's service territories. EUC services proposed to be offered through the SoCalREN pilot are: Marketing; Green Building Labeling and Real Estate Training; Single Family and Multifamily upgrades; Contractor Outreach; ; and Community Development Low-Income Housing upgrades.

Financing. The SoCalREN will offer financing options to local governments to supplement the on-bill financing offered by the IOUs and therefore enable greater investments in deep energy savings. Specific services offered will be Public Building Financing Programs Information and Outreach; EUC private

residential financing Loan Loss Reserve; Multifamily Loan Loss Reserve; Non-Residential PACE; and Public Building Revolving Loan Fund Information and Outreach.

Regional Energy Center. Building on the current Regional Energy Center which was launched with Flight 5.6 funds, the SoCalREN will offer comprehensive technical support to local governments and other public entities to enable them to implement deeper and more cost effective energy management practices. Specific services include an aggregated regional procurement and contracting program; utilization of the EEMIS software system for integrated and comprehensive energy data management; region-wide building benchmarking and EM&V; supporting local Climate Action and Energy Action plans to move to implementation; creation of a water-energy nexus pilot with water utilities; developing a regional energy project tracking and permitting system; and workforce development

In order to ensure the REN's success, a comprehensive communications and stakeholder engagement strategy will be implemented. Each of the three subprograms will have its own communication strategy. One of the roles of the Advisory Committee will be to promote the REN among its constituencies and engage community stakeholders.

2) Total Projected Program Budget and Savings:

Program Budget:	$44,800,328
kWh Savings:	54,321,228
kW Reduction:	25,403
therm Savings:	1,095,983

3) Table 1: Total Projected Program Budget & Savings by Subprogram

Subprogram	SCE ($)	SCG ($)	Kwh	KW	Therms
A: Energy Upgrade	$14,622,692	$6,492,411	8,599,784	4,038	433,909
B: Financing	$5,998,750	$1,059,750	16,046,444	1,250	261,665

C: SoCalREC	$15,086,725	$1,500,000	29,675,000	20,114	400,409
Total	**$35,748,167**	**$9,052,161**	**54,321,228**	**25,403**	**1,095,983**

4) Table 2: Total Projected Program Savings by IOU

Subprogram	SCE Kwh	SCE KW	SCG Therms	Total
A: Energy Upgrade	8,599,784	4,038	433,909	
B: Financing	16,046,444	1,250	261,665	
C: SoCalREC	29,675,000	20,114	400,409	
Total	**54,321,228**	**25,403**	**1,095,983**	

5) Short description of each subprogram (suggested word limit - 50 words/subprogram).

Subprogram A: Continue and Expand Various Energy Upgrade California in Los Angeles County Program Activities to the entire Region –

A number of the pilot programs that have been developed through the Energy Upgrade California in Los Angeles County (EUCLA) program that is supported by over $40 million in non-ratepayer grant funds will be continued and expanded throughout the region. Some of these pilot program activities will continue under Los Angeles County's DOE grant through at least June 2013 which provides an excellent opportunity to leverage ratepayer funds with outside grant funds for more cost-effective program outcomes.

Subprogram B: Develop and Launch Regional Public Agency Led Financing Programs for Energy Projects in Public, Commercial and Residential Buildings –

Financing initiatives to be developed and administered will include a regional public building financing information and outreach program, expansion of a successful EUC loan loss reserve program

(EUC-LLR), , creation of a multi-family loan loss reserve program (MF-LLR), promotion and administration of already established non-residential PACE programs, and information and outreach on public agency revolving loan fund programs (RLF).

Subprogram C: Continue and Expand Southern California Regional Energy Center (SoCalREC) Pilot to the entire Region –

SoCalREC is an innovative pilot project launched by Los Angeles County and the City of Huntington Beach in 2011 that is slated to terminate at the end of 2012. SoCalREC has already demonstrated how centrally led, joint actions by a broad group of engaged cities can complement existing LGPs and significantly expand the implementation of deeper and more cost-effective energy efficiency projects and make energy efficiency expertise widespread and typical for local governments and other public agencies. SoCalREC already has 55 local government participants and has identified over $20 million in previously untapped municipal facility projects for potential implementation under an aggregated procurement approach, and has solicited and identified a lender who will provide low-cost capital for the regional financing program. SoCalREN will continue these innovative and effective activities and greatly expand them to the entire Southern California region.

2013-2014 Energy Efficiency Programs

Southern California Regional Energy Network
Program Implementation Plan

1) Sub-Program Name:

Sub-Program A: Continue and Expand Various Program Activities of Energy Upgrade California in Los Angeles County throughout the entire Region

2) Sub-Program ID number: _____
3) Type of Sub-Program: __Core X Third Party __Partnership
4) Market sector or segment that this sub-program is designed to serve[1]:

a. X Residential
   i. Including Low Income? X Yes __ No;
   ii. Including Moderate Income? X Yes __ No.
   iii. Including or specifically Multifamily buildings X Yes __ No.
   iv. Including or specifically Rental units? X Yes __ No.
b. __ Commercial (List applicable NAIC codes: _____)
c. __ Industrial (List applicable NAIC codes: _____)
d. __ Agricultural (List applicable NAIC codes: _____)

5) Is this sub-program primarily a:
a. Non-resource program ___ Yes X No
b. Resource acquisition program X Yes ___ No
c. Market Transformation Program X Yes ___ No

6) Indicate the primary intervention strategies:
a. Upstream ___ Yes X No
b. Midstream ___ Yes X No
c. Downstream X Yes ___ No
d. Direct Install __ Yes X No.
e. Non Resource __ Yes X No.

[1] Check all that apply

7) Projected Sub-program Total Resource Cost (TRC) and Program Administrator Cost (PAC)

ELECTRIC: TRC: 0.74 PAC: 1.26
GAS: TRC: 0.51 PAC: 0.79

8) Projected Sub-Program Budget

Table 1 - Electric (Subprogram A): Projected Sub-Program Budget, by Calendar Year[2]

	Program Year		
Sub-Program A: EUC	**2013**	**2014**	**Total**
Admin	796,646	796,646	1,593,293
Incentives	2,821,842	2,821,842	5,643,683
Direct Implementation	2,335,236	2,335,236	4,670,472
Marketing, Outreach, and Marketing Incentives	1,377,622	1,377,622	2,755,244
Total	**7,331,346**	**7,331,346**	**14,662,692**

Table 2 - Gas (Subprogram A): Projected Sub-Program Budget, by Calendar Year[3]

	Program Year		
Sub-Program A: EUC	**2013**	**2014**	**Total**

Admin	352,492	352,492	704,983
Incentives	1,296,198	1,296,198	2,592,396
Direct Implementation	1,007,470	1,007,470	2,014,939
Marketing, Outreach, and Marketing Incentives	590,047	590,047	1,180,093
Total	**3,246,205**	**3,246,205**	**6,492,411**

Table 3 - Combined (Subprogram A): Projected Sub-Program Budget, by Calendar Year[4]

	Program Year		
Sub-Program A: EUC	**2013**	**2014**	**Total**
Admin	1,149,138	1,149,138	2,298,276
Incentives	118,039	118,039	8,236,079
Direct Implementation	3,342,706	3,342,706	6,685,411
Marketing, Outreach, and Marketing Incentives	1 967,669	1 967,669	3,935,337
Total	**10,577,551**	**10,577,551**	**21,155,103**

9) **Sub-Program Description, Objectives and Theory**

a) **Sub-Program Description and Theory:**

The LA County team is currently implementing a number of innovative pilot programs through a U.S. Department of Energy Efficiency and Conservation Block Grant (EECBG) and a Better Buildings Program (BBP) grant. The purpose of these grants is to test program designs that are intended to drive demand for

IOU core programs and advance market transformation for whole house upgrades. The EECBG and BBP pilot programs will be in place until at least June, 2013.

LA County is proposing to expand these resource and non-resource pilot programs throughout the SoCal REN region in support of Energy Upgrade California. The programs offer a unique opportunity to avoid the time and cost associated with program design and implementation by simply expanding existing, successful programs with an implementation infrastructure that is already in place.

SoCalREN agrees with the Commission's direction for the IOU's to retain a market transformation consultant, but this should not delay launch of REN and IOU programs in 2013. Market transformation is a long term commitment and the REN would like to be included in screening and interviewing consultant candidates. The REN recommends that a market transformation committee be formed with the consultant, IOU's, and REN's as members to develop a market transformation roadmap with 3, 5, and 10 year targets.

The REN recognizes the value of establishing a working group advisory committee and supports the continuation of open communication between the IOU's and REN's. The REN also supports the Commission's desire that the working group be co-chaired by an IOU and REN representative. The committee should focus on key market transformation issues like expansion of the contractor base, workforce skills development, homeowner demographics and delivery strategies, effectiveness of incentive programs, marketing and outreach, and statewide consistency. The SoCalREN and the IOU's have agreed to engage in stakeholder review of the joint program design that replaces the Basic Path and would involve the working group as needed.

SoCalREN strongly supports the need to improve the contractor and homeowner experience as it relates to EUC programs. This commitment to customer satisfaction is what drove the development of the Flex Path program by the LA County team. The REN looks forward to working with interested parties such

as SolarCity, CBPCA, and BPI to streamline program processes and improve customer and contractor satisfaction. The REN welcomes constructive input from all stakeholders.

The REN agrees with the Commission's direction that the whole house program's brand name should remain Energy Upgrade California. The opportunity to leverage millions of dollars of ARRA funds spent on EUC brand awareness is a great asset to California ratepayers, and cannot be overlooked. The REN will work with SCE and SCG to ensure that brand guidelines are strictly followed in the development of marketing and outreach materials and naming conventions of individual programs. It is important to note that LA County and the IOU's have been closely collaborating in this area for more than two years.

SoCal REN agrees with the Commissions direction to target hotter, inland climate zones with a greater proportion of marketing and outreach funds. Clearly homeowners in these hotter climate zones have more to gain from EUC programs in terms of reducing energy use, saving money, and enhancing the comfort of their homes. The REN is committed to spending marketing and outreach funds in targeted areas that offer the greatest return.

The Commission has directed the IOU's to implement a 10-year declining incentive structure that is based on the number of retrofits achieved by the program. The REN agrees in principle with the declining incentive structure provided it includes a clearly defined market transformation plan with targets for the number and distribution of retrofits, number of participating contractors, and number of low interest loans. The declining incentive structure must have some flexibility to account for the pace of market transformation, and there are a number of critical factors that must be considered. The REN recommends that the development of the declining incentive structure be assigned to the EUC Working Group that includes the IOU's, REN's, and other interested stakeholders.

SoCalREN will work with the IOU's to identify contractor training needs that support market transformation. Unfortunately, the REN budget for ongoing workforce development was not approved and

the IOU's will have to fund most contractor outreach and training activities. The Commission did not approve of contractor scholarships as proposed by the REN and may have erroneously disapproved the entire contractor training and outreach budget, with the exception of contractor co-op marketing and HVAC contractor incentives. The REN requests that the Commission reconsider funding for contractor training and outreach exclusive of contractor scholarships. This funding is necessary in order for the REN to partner with the IOU's in this critical market transformation component.

The REN plans to work with SCE and SCG to enroll contractors into the EUC program. The Flex Path program required homeowners to use a EUC participating contractor from the list maintained by SCE. The REN does not anticipate any change in this approach, and will encourage non-participating contractors to attend a participation workshop and training required to become a EUC participating contractor. After much discussion, the IOU's and REN agree that contractors that perform only modified Basic Path projects need not have a BPI certified analyst on staff as an employee. These contractors would continue to be allowed to subcontract BPI testing to a certified analyst. The REN believes it is critical for market transformation to allow the market to solve this problem by developing a cadre of independent HERS/BPI professionals that can bring real value to a homeowner's project. These professionals can provide testing services that satisfy the EUC program and rate a home for asset valuation. This flexibility is important in terms of understanding market demand for a HERS rating. The REN/IOU team has also agreed that all projects will require test out for combustion safety performed by a BPI certified analyst.

A1: Continue locally tailored marketing and outreach programs - $3,272,744

Marketing & Outreach - $ 2,569,000

Program Description

An essential part of transforming the whole building retrofit market includes increasing awareness of energy efficiency and whole-house building retrofits. To do this, a comprehensive marketing and outreach program was implemented in Los Angeles County with ARRA funds and in conjunction with the IOUs. Under the SoCalREN, marketing and outreach activities will be expanded to include all of the IOU service territory. Please see Exhibit A2 for examples of marketing materials developed for EUCLA.

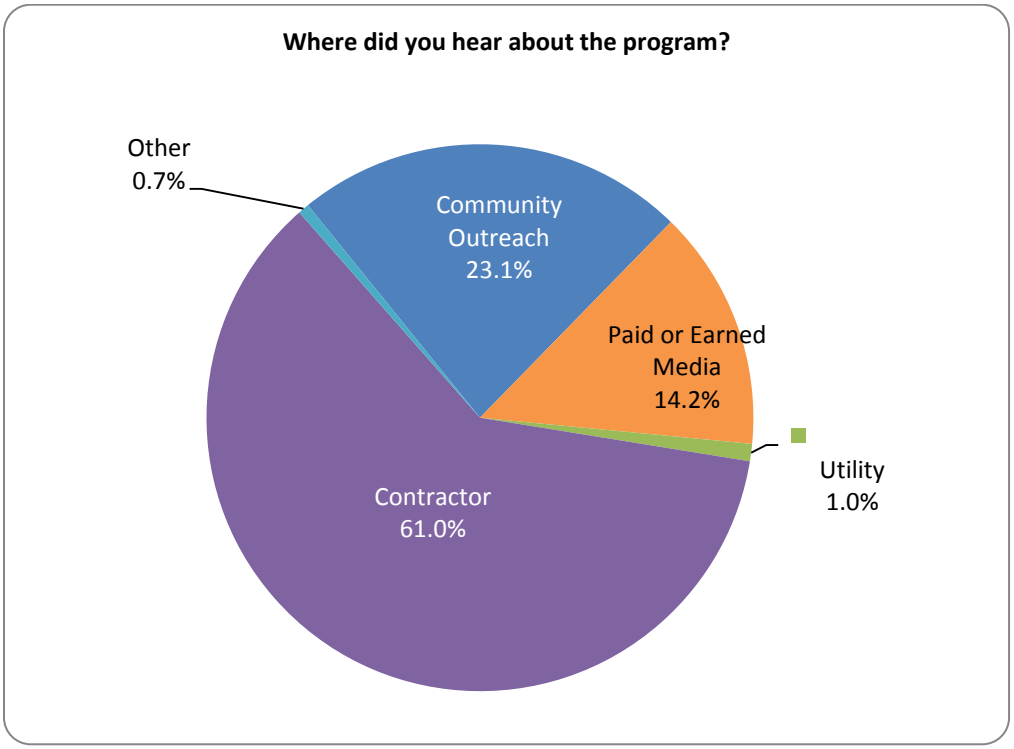
Following are descriptions of a variety of locally tailored marketing and outreach programs implemented by LA County. Because it would be cost prohibitive, not all of the activities undertaken to date in LA County will be replicated. Instead, the most cost-effective methods for promoting the EUC brand through the SoCalREN will be implemented, based on lessons learned.

- Market analysis developed by EUCLA program partners based upon housing stock, demographic, and energy use patterns, including:
    - Target audiences
    - Key messaging
    - Hot spot" maps
- Countywide and local marketing and outreach plans
- Countywide marketing materials and media buys (broadcast, outdoor, and online)
- Countywide and local public relations campaigns
- Countywide developed marketing collateral templates
- Locally customized marketing materials, media buys (including broadcast, outdoor, print, and online), earned media, and social media campaigns (Facebook, twitter, texting campaign)
- Multi-ethnic outreach and marketing including PR, media buys, and in-language support provided in person, by phone, and print materials
- Environmental Information Centers (portable, stand-alone booths placed throughout areas of the County)
- Environmental Service Centers (physical locations where residents can have customer service and learn about energy efficiency and sustainability)
- LA Hotline toll free phone number
- Extensive local outreach directed by countywide marketing plans/analysis, including:

    - Presentations/workshops with key partners/stakeholders (e.g., building department staff, realtors)
    - Community event tabling
    - Canvassing (door hangers, brochures, flyers and homeowner engagement)
    - Homeowner presentations (e.g., through community, business, and civic groups)
    - Homeowner workshops
    - Participation in a variety of events (expos, concerts in the park, green fairs, etc)
    - Providing outreach materials for cities to use (pull-up banners, canopies, posters, tabletop displays)
    - Family Stories videos providing relatable testimonials and completed upgrades
    - PSAs using local celebrities used for advertising and as a sales tool for contractors
    - Assessment vouchers and promo code coupons aimed at tracking where leads come from
    - Customer Resource Management database and email marketing campaign for homeowners that signed up for our database
    - Industry support newsletters and eblasts aimed at engaging stakeholders and inspiring affiliates
    - City stakeholder presentations to maintain engagement by local government leaders
- Energy Upgrade Roadshows consists of an Energy Upgrade logo wrapped van that drives to an event and provides homeowner outreach by explaining how their displays operate (energy efficient model home, lighting display, and window display), answering questions about the program, and dispersing program materials and brochures to homeowners

- Trigger event marketing to capture energy efficiency upgrade opportunities through trigger events (furnace or hot water heater replacement, remodels and renovations, etc.), such as:
    - Realtor-client outreach materials and trainings as outlined below
    - Program collateral and educational materials maintained within building departments
    - Implementing retailer outreach programs that provide in-store training and marketing displays to local home improvement retailers
    - Online ads aimed at catching homeowners searching for solar, HVAC, energy, or home improvement, sending them to Energy Upgrade California Website first
    - Additional stakeholder engagement activities
- Implementing corporate outreach programs with companies such as Northrop Grumman, Jet Propulsion Laboratory, Kaiser Permanente, Disney, Toyota, Parsons, Dreamworks, Yahoo, AeroVironment, and employees of the County of Los Angeles

Figure 1 (Subprogram A): Successful Marketing & Workforce Activities Driving EUCLA Participation Data as of November 2012



The following outreach activities will be continued to promote Energy Upgrade:

- EUC Workshops (~50/year): Staff will leverage local partner relationships with Cities/COGs, Building Industry Professional/Realtor networks, community organizations (including Energy Champions), neighborhood/property owner associations, corporations and other affiliates to identify opportunities to organize dedicated EUC Workshop events in which the Assessment Vouchers will be given away in an opportunity drawing to interested homeowners that join a mailing list to receive more information about the various programs. At these events, staff will communicate the method by which a homeowner can benefit from the Assessment Vouchers as it relates to EUC. By design, staff will lead with the benefits of an upgrade to a captive audience of eligible homeowners, provide materials to help educate homeowner decisions, and expose them to EUC Participating Contractors, and generate leads for those contractors.
- EUC Presentations (~75/year): Staff will satisfy requests and seek out opportunities to present to key program stakeholders and captive audiences of eligible homeowners to communicate the method by which a homeowner can benefit from entering to win an Assessment Voucher as it relates to EUC. By design, staff will lead with the benefits of an upgrade to a captive audience of eligible homeowners, provide materials to help educate homeowner decisions, and generate interest and leads for Participating Contractors. At these events, if appropriate, staff will secure participation by EUC Participating Contractors.
- Exhibit booths at existing events (~125/year): Since 2010, the EUCLA Staff has built a wide network of relationships with event producers. The team will continue negotiating cost effective requests and seek out opportunities to educate the public at community and private events to increase participation and awareness of the benefits of entering to win an Assessment Voucher as it relates to EUC. The LA County team will describe the benefits of an upgrade to a captive audience of eligible homeowners, provide materials to help educate homeowner decisions, and generate leads for all of the program components. At these events, if appropriate, staff will secure participation by EUC Participating Contractors.
- Secure attendance at Outreach Events: In order to touch the maximum amount of consumers, attendance will be secured using event promotion tactics such as leveraging established electronic communication channels of local partners, local and online ad placement, door hangers/flyer

canvassing, door-to-door canvassing, engaging with a media/PR agency to reach out to main stream and multi-ethnic media to secure earned media coverage for these events. Additionally, the local partners listed above will be utilized to assist in event attendance and promotion and given electronic, print and display materials to communicate with their networks.

- Provide effective marketing collateral materials and templates: Collateral and templates will continue to be utilized to help inform the public about the benefits of EUC and the whole-house approach. These materials will be distributed at events and electronically. Multi-ethnic materials and support will also be available
- Be available for homeowner follow-up: Staff will continue to be available to the public through the LA Call Center and email should any consumers have questions related to the Assessment Vouchers or how the voucher program relates to EUC. Multi-ethnic support will also be available
- Maintain follow-up email marketing campaigns: Staff will continue to manage a homeowner and stakeholder database to continue program component email marketing campaigns for individuals that signed up for our database either through event attendance, presentations, the call center, or website. This will allow for all individuals to be updated on upcoming events and to learn more about the variety of programs offered to the public.
- Website: In collaboration with the statewide EUC implementer, LA County intends on continuing and expanding locally customized pages of the Energy Upgrade California website www.EnergyUpgradeCA.org/LACounty, including:
    - Promotion of Contractor/Rater, Rebates/Incentives, and Financing directories
    - Promotion and updating of News and Events within Local Info county pages
    - Maintenance of training calendar on contractor page
    - Promotion of “Family Stories” web pages which focused on homeowner testimonials and case studies
    - “Overview of the Assessment” web page demystifying the assessment for the homeowner
    - Rotating box on homepage acting as a web “billboard”
    - Live chat feature specifically on LA-specific pages
    - Case studies resulting from the Home Energy Makeover Contest
- Environmental Service/Information Centers: One key communications strategy of bringing awareness to the Energy Upgrade program by LA County was to establish the Environmental Information Center Program which is made up of 11 kiosks, free-standing portable booth that have

built-in literature racks, and a touch screen which links to the Energy Upgrade website activated by the user. During sleep mode, the flat screen plays a looped slide show of photos from outreach events and a video called “Family Stories”, a production video highlighting six homeowners that had their homes upgraded by Participating Contractors during the Energy Upgrade process. An online map will be made available showing homeowners the locations of the kiosks which can be printed out and on display at public buildings, libraries, as well as handed out at the peer-to-peer outreach events, workshops, and presentations if relevant.

- Social Media: EUCLA uses Facebook as a social media outlet to inexpensively reach target audiences. By scheduling regular posts twice daily the team is able to educate homeowners about the program, encourage program event participation, disperse energy-saving tips and environmentally friendly news, and helps build a sustainable connection between contractors and participants. This medium is also used to feature success stories, testimonials, share upgrade and event photos, and answer questions that Facebook fans post. The advantage Facebook has over traditional media is its ability to tap into a user’s social network. Each time someone "likes" EUCLA on Facebook, each of his or her friends is given the opportunity to follow EUCLA on Facebook, giving the program an ever expanding reach. EUCLA has capitalized on this multiplier effect by purchasing inexpensive, targeted Facebook ads that link to either the program website, or our Facebook page. Since ads began running at the end of March, 2012, EUCLA's Facebook fan base has tripled to 600 followers, and over 1,200 clicks have been directed to the program website. By capitalizing on existing Facebook fans’ social networks, Facebook ads have proven to be a highly successful way of introducing the program to new viewers; our Facebook page’s weekly reach of 7,500 people expands to over 140,000 people during a Facebook ad campaign. By complementing our traditional media and other outreach efforts, Facebook has helped keep new and existing followers connected to the program, and has contributed to increased brand recognition and program participation.

  Creating and managing new Facebook pages for regions that do not currently have program Facebook pages (such as Orange County, San Bernardino County, and Ventura County) is vital towards developing a peer to peer following in those regions and increasing program participation, as a result. Hootsuite can be utilized to easily schedule Facebook posts on multiple Facebook

pages in several regions at one time. Facebook ads are recommended in all regions to continue to grow followers and increase program participation.

Besides Facebook ads, Google AdWords is another valuable social media advertising vehicle that has successfully driven traffic to EUCLA's website. At the end of May 2012, EUCLA launched a highly targeted Google AdWord campaign, which generated over 5,000 clicks to the website and over 8 million impressions. Over 83 percent of clicks to the EUCLA website from AdWords were from new visitors. Through strategic keyword, content, and display network targeting, our Google AdWords campaign reached a new audience who did not yet know about the program, but who were already actively searching for components of the program online (i.e. tankless hot water heaters, insulation, air conditioner or window replacements, energy rebates, home remodeling ideas, or local contractors, etc.) Google AdWords helps provide effective program targeting to reach a new and uninformed pool of participants.

Lastly, mobile texting is a cutting-edge social media outlet for reaching new program participants. In mid-April, EUCLA launched a mobile texting campaign as part of our online and radio ads. EUCLA's mobile texting campaign has resulted in more than 500 subscribers. Ad viewers or listeners subscribe to EUCLA program texts by texting the word "Energy" in order to receive program information. Subscribers are sent event reminder texts for local EUCLA homeowner workshops. Mobile texting has resulted in increased attendance to EUCLA homeowner workshops and has resulted in visits to the website.

In addition to marketing and outreach directed at homeowners, *EUCLA* marketing and outreach activities also targeted contractor and realtor groups.

- Contractor-focused marketing and outreach activities included:

- Online Resource library containing marketing materials and Print-on-demand capability
- Free lawn signs
- Co-brandable collateral templates specifically for contractor use
- Contractor case studies on the contractor website aimed at demonstrating successful business models for other contractors
- Sales presentations and webinars
- Program manuals and "How to market Energy Upgrade" toolkits
- "Heat maps" for contractors to use in their own advertising campaigns.
- Workshops with Participating Contractors on how to use/leverage Energy Upgrade California logos, branding, messaging, and collateral templates
- Sharing of developed "hot spot" maps based on housing stock, demographic, and energy-use patterns
- Support to contractors so they could be appropriately listed in www.EnergyUpgradeCA.org directories

- Realtor-focused marketing and outreach activities included:
  - Online resource library containing affiliate advocacy information
  - Presentations, newsletter articles, and web buttons available for Real Estate professionals to be able to touch their market
  - Realtor focused workshops and trainings to educate realtors on whole building retrofits
  - Working groups to address potential implementation of time-of-sale energy conservation ordinances
  - Realtor-client facing materials for program outreach
  - Networking events with Participating Contractors

EUCLA implemented, and coordinated with, various countywide and IOU rebate programs. These programs and associated metrics are summarized in Figure 2 below.

Figure 2 (Subprogram A): EUCLA Summary of Marketing and Outreach Methods as of November 2012

General Marketing Activities	
Total Media Impressions (Paid and earned)	1,473,423,053
Total Website Page Views (Energy Upgrade California/local portals as appropriate)	795,190
Targeted Communications	
Direct mail	15,303
Email sign ups (homeowner, contractors, city/COGs, Real Estate Professionals):	8,341
Individual emails	~53,500
Hangers/canvassing	381,000
Events, including public/homeowner-facing workshops, information sessions and sector-specific (for realtors, building officials, city council, etc.)	
Number of Events	869
Number of touches	799,053
Energy Upgrade Call Center	
Number of Email Tickets	336
Number of Calls	3,756

Assessment Voucher – $248,804

The Assessment Voucher program was created as a marketing tactic used to overcome the reluctance of homeowners to pay for home energy audits which determine potential energy savings and costs of home energy improvements. The vouchers aimed at reducing the upfront cost of entry to the Energy Upgrade program for homeowners, thereby resulting in more upgrade projects for Participating Contractors. Homeowners were provided with a $300 voucher to significantly reduce, if not eliminate, the cost of the whole house assessment. This voucher was distributed to contractors to use as a sales tool at events in addition to being given to homeowners who win an opportunity drawing at events. Participating Contractors

attending such events would leverage the voucher prize as an opportunity to talk more in depth with that homeowner about scheduling an in-home assessment.

The $300 audit voucher may only be fulfilled if an upgrade project is also undertaken so as to discourage contractors from making a business solely from audits without an eye toward selling a whole house retrofit.

The $300 vouchers were designed to look like banknotes. Each voucher has a single identifying code, which allows the team to track the process from the exact event at which a homeowner wins a voucher all the way to the Participating Contractor who turns it in. The $300 is paid to contractors once they submit a paid invoice for the audit that shows the $300 discount and includes the homeowner's information.

Evaluation

The Assessment Vouchers have been an effective marketing tactic for Participating Contractors overall with 174 redeemed assessment vouchers out of 871 assessment vouchers given to those contractors. This means $52,400 in incentives have been awarded as a result of the assessment vouchers. Of the 47 active Participating Contractors (those who have submitted advanced path projects), 24 have redeemed their assessment vouchers resulting in a 51% utilization rate by active Participating Contractors. Out of the 124 assessment vouchers given to homeowners attending Energy Upgrade events, 19 were redeemed reflecting a 15% utilization rate by homeowners attending EUCLA events. This data supports the use of assessment vouchers going forward at events and during face-to-face interactions.

Energy Upgrade Coupon - $154,940

Program Description

Energy Upgrade Coupons were designed to be administered during homeowner-facing events to incentivize homeowners to move forward with EUC Advanced Package retrofit projects by increasing the total amount of money that a homeowner is reimbursed. SoCalREN incentive applicants will be allowed to

use up to two of these $200 coupons per retrofit project for a total incentive increase of $400. The coupons provide an additional incentive to help offset project costs for homeowners, and more importantly, to track program marketing efforts. Methods of delivery will include giving homeowners a coupon:

- For attending an event where we engage them in a conversation about EUC and the benefits of a whole-house approach energy upgrade
- As a reward for signing up to receive the EUC newsletter, thereby becoming part of the EUC marketing database and receiving forthcoming program messaging and news
- As a general handout and "foot in the door" during face-to-face engagement opportunities
- Through EUC Participating Contractors
- Distributed through faith-based and community organizations

Coupons are customized by marketing type and will measure coupon marketing and incentive effectiveness based on coupon redemption. Each Coupon has an identifying code on the coupon and an expiration date. The codes correspond to each of the distribution methods and channels listed above.

Instructions on the back of the coupon guide homeowners to include the coupon code on their EUC application, crediting the marketing source for resulting in an upgrade, and rewarding the homeowner for their participation in this exercise in the form of an additional incentive. As the applications are processed, codes are recorded, and their frequencies are aggregated, the effectiveness of various marketing tactics and channels will be measured. This allows marketing plans to be more nimble and cost-effective for they can be changed and adapted in real time for maximum recruitment impact.

Evaluation

The distribution of Energy Upgrade Coupons at events and other face-to-face engagement opportunities has proven to be an effective marketing tool for Participating Contractors and the EUC program to reach homeowners. 19% of the *active* Participating Contractor's (those submitting Advanced and Basic Energy Upgrade projects in SCE territory) have applications that include LA County Energy Upgrade Coupons.

Energy Champions - $300,000

Energy Champions (ECs) began as a pilot program that tested whether or not qualified, non-profit community organizations who utilize their own outreach networks, community activities, and other resources to promote the benefits of EUC are an effective tool to convince homeowners to implement an EUC upgrade. In return, and with verification from the homeowner that the Energy Champion was responsible for the upgrade commitment through the online Homeowner Action Form, the Energy Champion is provided an incentive ($100 for a Basic or Flex Path project, $500 for an Advanced Path project).

The Energy Champions are prequalified through an application process by which applications are submitted to the program administrator through the EUC website and vetted through a selection committee. After acceptance, organizations designate one point person from their organization to lead efforts and act as a liaison with the program administrator, are encouraged to build a partnership with one or more Participating Contractors, and they are trained where they receive a training guide, access to a password protected online website portal housing project information, and marketing resources.

Energy Champions are provided with access to EUC support staff to assist them with program questions, for feedback/support with outreach activities, to obtain customized marketing materials for use in their own peer-to-peer outreach as well as leveraging the implementation team events, workshops, and presentations as outlined in the Local Marketing and Outreach section. Energy Champions rely on implementation team assistance to help connect them to local resources such as Participating Contractors to help promote their EC efforts. Furthermore, Energy Champions have regular communication from the Energy Champions program administrator to keep them up to date on the latest program details regarding the EC program and EUCLA program.

As of 11/30/12,

- 88 organizations have been trained in-person and/or by webinar to become active participants in the program.
    - 103 organizations applied and were pre-qualified for participation; however, due to leadership changes and impacted workloads some organizations were unable to move forward with the program.
- 174 of HAFs have been submitted designating 21 EC organizations.
- Approximately 15% of all Advanced Projects in LA County are attributed to EC efforts.
- $30,800 in incentives have been paid with $51,800 in the pipeline.
- The reach of the 89 organizations through their networks accounts for approximately 24,500 individuals according to their application submissions.
- Over 300 Energy Upgrade events, have involved Energy Champions either through presentations, meetings, workshops, exhibit booths.

In 2013-2014 The Energy Champions program will continue engaging with both existing and additional community organizations to continue testing to see if a better conversion rate can be accomplished. The program design will be modified taking into consideration the lessons learned from the current Energy Champions program as well recent relevant CBSM efforts in similar marketplaces. Many of the problems surrounding the original pilot program reflected a slow EUC ramp up, and the program is anticipating greater ease in continued pilot delivery due to higher baseline EUC awareness and established program norms. Program design will be adjusted to reflect initial Pilot results to better focus resources likely to result in higher Energy Upgrade program participation. Implementation team will coordinate with IOUs as necessary to leverage efforts and streamline processes including simplifying the process for equating completed retrofit projects to the Energy Champion organization. Energy Champions, while continuing to act as a marketing program with financial incentives, will consider innovative methods to further motivate the Energy Champion organizations to continue outreach on behalf of the Energy Upgrade program.

A2: Continue and expand implementation of EUCLA Green Building Labeling Pilot program which includes Realtor training, MLS advocacy, assessment incentives, and homeowner education and outreach - $2,010,000

Market Description

The home purchase/sale trigger event is a key leverage point to educate homeowners on the value of whole house energy efficiency retrofits. A review of DataQuick home sales data shows more than 188,000 homes sold in the four counties of Los Angeles, Riverside, Orange, and San Bernardino in 2012. The Southern San Joaquin counties of Fresno, Kern, Kings, and Tulare generated an additional 28,000 home sales in the same period. This segment represents a substantial pool of Energy Upgrade California program candidates because the Joint Center for Housing Studies estimates that home buyers spend more than $6,000 per year on home improvements in the first two years after buying homes. In subsequent years, the annual average outlay drops to $2,500.[5] This initiative expands the pool of qualified real estate professionals who are able to match contractors with prospective clients. Key market actors are as follows:

- **Real Estate Professionals** are a key community for the promotion of green building decision criteria at time of sale and purchase. California Association of Realtors counts 113 local chapters and approximately 160,000[6] members statewide. Many Realtors have a significant database of current customers to whom they communicate on a regular basis. Anecdotal evidence suggests that many may have 1000–2000 contacts, with whom they correspond regularly outside of real estate transactions.

---

[5] Joint Center for Housing Studies of Harvard University (2011), *The State of the Nation's Housing: 2011*, http://www.jchs.harvard.edu/research/state_nations_housing

[6] http://www.calculatedriskblog.com/2010/10/california-number-of-licensed-real.html

- **Home Inspectors:** Statewide, there are approximately 6,000 inspectors with most belonging to a national or statewide membership association[7]. Home inspectors typically develop close working relationships with Realtors, on whom they rely heavily for inspection referrals. The general inspection represents an ideal opportunity to assess opportunities for energy efficiency improvements in the course of an inspection that is already a core part of the transaction process.
- **Appraisers** can provide added value to buyers and sellers by evaluating the green features in a home based on industry standards and methods. According to the Office of Real Estate Appraisers, 12,812[8] appraisers are licensed in California.
- **Loan officers** play a critical role in assisting home buyers through the process of accessing energy-efficient mortgages, 203k loans, and other sources of financing. Lenders also control the selection of the appraiser.

Market Characterization

The green real estate market is impeded by at least four key market barriers:

- **Lack of consumer awareness.** Green features are largely invisible and their benefits become apparent only through experience.
- **Lack of industry expertise**. Real estate professionals do not understand the value of green features, how to evaluate them, or how to communicate them.
- **Lack of credibility.** Home buyers do not know which sources of information to trust as credible and which to discount as potentially biased.
- **High evaluation costs.** The cost of evaluating a home's environmental features and benefits to a credible standard currently ranges from $1,500 to $2,000, which is considered cost-prohibitive in the context of a home sale transaction.

[7] http://www.inspectionpro.com/

[8] http://www.orea.ca.gov/pdf/Weekly%20Pie.pdf (http://www.orea.ca.gov/)

The Green Real Estate Initiative will pursue at least three opportunities to reduce market barriers and promote energy-efficient upgrades:

1) **Time of purchase:** Realtors and home inspectors are well positioned to help their clients assess the energy performance of potential home purchases, identify energy upgrade opportunities, and connect with the financial and technical resources needed to make the improvements.
2) **Past clients:** Realtors and loan officers maintain large contact lists of prior clients and regularly look for opportunities to reconnect with them in ways that spur referrals and repeat business. Information about Energy Upgrade California rebates and associated financing opportunities can provide such an opportunity.
3) **Time of sale:** Research has demonstrated a measurable sales price premium for green homes. However, capturing the property value benefit at time of sale is complicated by the lack of a credible mechanism for differentiating green homes from conventional homes. The Green Real Estate Initiative fills this gap by establishing a definition for a "green home," supported by a robust mechanism for third party verification.

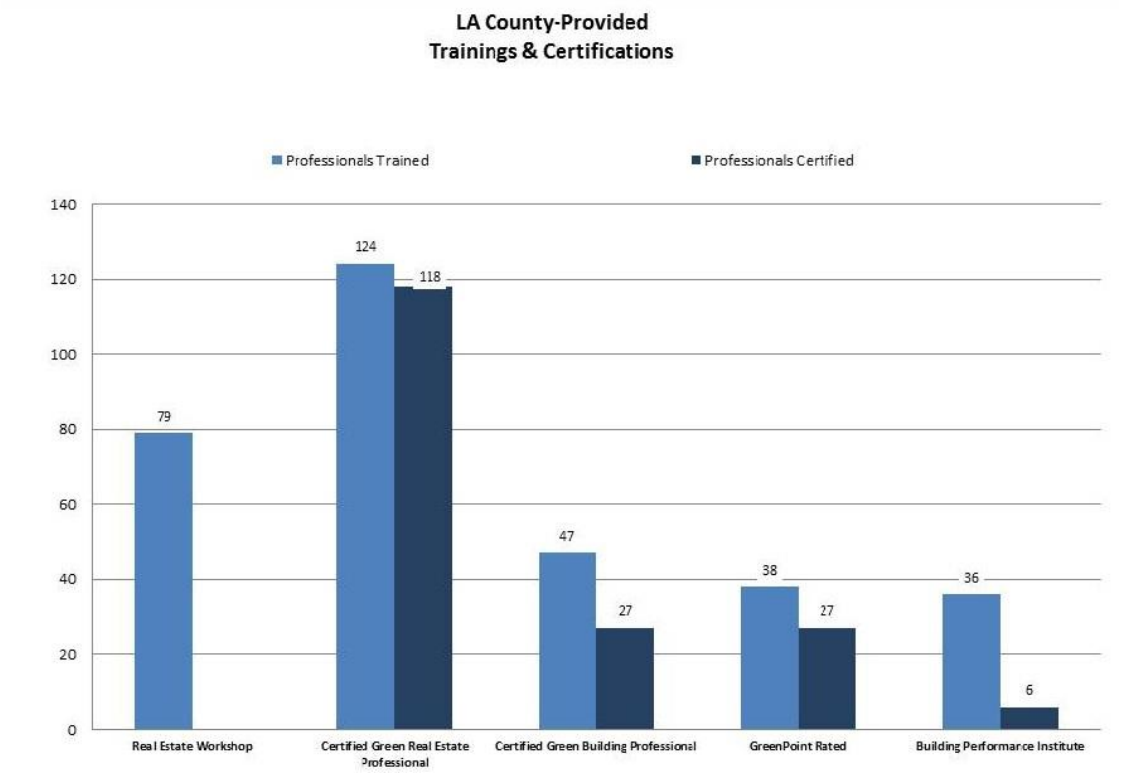
Proposed Interventions

The Green Real Estate Initiative builds on prior investments the County of Los Angeles has made in this arena.

- The County provided training for 158 real estate professionals via three Certified Green Real Estate Professional training events since August, 2011. The training equips the real estate professional with critical knowledge and understanding needed to advocate for and assist consumers in participating in Energy Upgrade California. It demonstrates how the overall cost of homeownership (mortgage, taxes, insurance and utility costs) can be reduced using the incentives and financing available as well as the potential for increased home values.
- The County funded advocacy efforts to MLS systems, including dissemination of Guideline for Greening an MLS in California. Green fields are now incorporated into CRMLS, which serves ten counties and 31 Associations of Realtors in Los Angeles, Butte, Almador, Lake, Madera, Mariposa, Merced, Orange, Riverside, and Tehama counties.

- The County offered incentives through its Green Labeling pilot program: an incentive to homeowners to offset the cost of a green building label and a referral incentive to professionals (e.g., contractor, real estate agent) who refer projects into the program. More than 600 homeowners received either a $1,000 incentive or a $2,000 incentive, depending on the improvements they made. The County also offered an additional $200 referral incentive to the real estate professional who referred the homeowner to the program.
- The County completed valuation studies on the acceptable appraisal methodology to justify increased value of a green home when the most traditional form of attributing value in the residential market (comparables) is not available.

Figure 3 (Subprogram A): LA County-Provided Trainings and Certifications



For 2013-2014, the Green Real Estate Initiative will develop the real estate market for energy-efficient homes via three key interventions:

Intervention	Barriers Addressed
In-depth training for real estate professionals, including Realtors, home inspectors, appraisers, and loan officers	Lack of industry expertise High evaluation costs
Inclusion of green fields on MLS systems	Lack of credibility
Home buyer education and outreach	Lack of consumer awareness

The Green Real Estate Initiative seeks to accomplish four outcomes by the end of 2014:

1) Establish and/or disseminate industry best practices for assessing environmental performance in the course of time-of-sale inspections.
2) Establish and/or disseminate industry best practices for appraising green features.

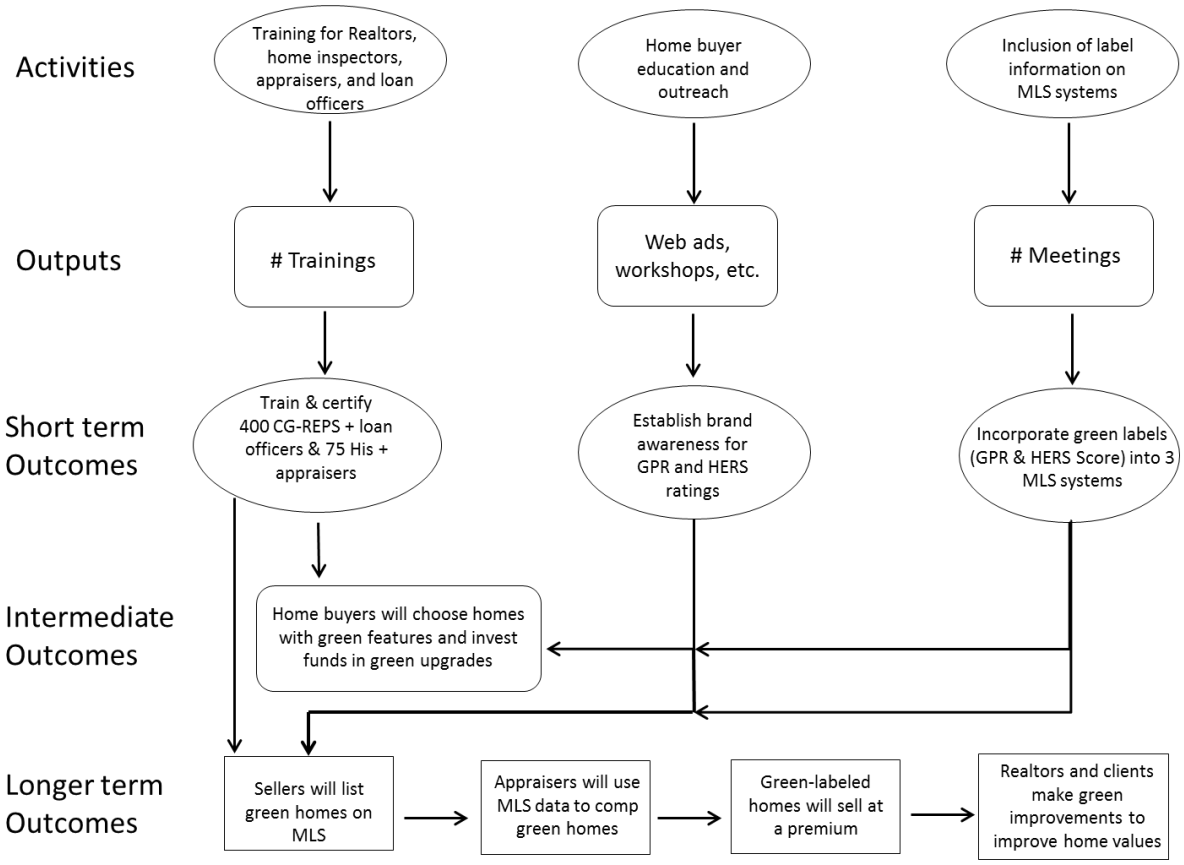
3) Train and certify 475 green real estate professionals (i.e. Realtors, home inspectors, appraisers, and loan officers) by the end of 2014, including 80 professionals in Southern San Joaquin Valley
4) Incorporate green fields and green labels, such as GreenPoint Rated and HERS Score, into 3 MLS systems, representing the primary MLS systems serving Southern California

The Green Real Estate Initiative supports achievement of the CPUC's Energy Efficiency Strategic Plan, which calls for deployment of energy or carbon labeling programs at time of sale and inclusion of home energy ratings in real estate sales listing information.

Logic Model

The Green Real Estate Initiative aims to transform the real estate market in the following ways:

1) Home buyers will preferentially choose homes with green features and will increasingly invest post-purchase home improvement funds in green upgrades.
2) Home sellers will market the green benefits of their homes through the MLS.
3) Appraisers will use MLS data to develop comps for green homes.
4) Green-labeled homes will sell at a premium, thereby providing the necessary comps to support higher appraisals.
5) Realtors and clients will begin making green improvements prior to sale to improve home values.



Evaluation Plan

The proposed evaluation plan will support program tracking and reporting for the following Market Transformation Indicators:

- Number of trained real estate professionals, including Realtors, home inspectors, appraisers, and loan officers
- Homebuyer awareness of Energy Upgrade California, HERS scores, and green labels
- Number of green inspections and HERS ratings associated with home sales or purchases
- Number of Energy Upgrade jobs completed within two years of home purchase
- Number of green appraisals

Evaluation activities associated with each implementation activity are summarized below. Performance benchmarks will be established for all evaluation elements and program performance will be compared to those benchmarks.

1) Train real estate professionals
    a. Track training pipeline on a monthly basis, including number of prospects, number of enrollees, and number of certified graduates.
    b. Invite all trainees to complete evaluation surveys, including questions about satisfaction and communication channels they used to learn about the program.
    c. Conduct quarterly surveys of certified CG-REP Realtors to determine:
        i. Number of seller's agents who marketed a green-labeled home in the prior quarter
        ii. Opportunities and challenges encountered in marketing green homes
        iii. Opportunities and challenges encountered in providing green Realtor services to buyers
    d. Conduct annual focus groups with CG-REPs and other industry stakeholders to review program accomplishments
2) Green MLS systems, serving key metropolitan markets in California.
    a. Conduct annual surveys of certified CG-REP Realtors to determine:
        i. Number of seller's agents who listed a green-labeled home on the MLS in the prior year
        ii. Number of seller's agents whose clients made green improvements prior to sale in order to enhance green score and/or market value
        iii. Number of buyer's agents who used green fields in MLS listings to help identify candidate properties for their clients

A3: Continue, enhance and expand EUCLA "Flex Path" Incentive Program which supplements the under-performing EUC Basic Package and is more attainable for most low-moderate income households and for EUC contractors. - $4,614,308

The Existing ARRA Flex Path Program

Introduction

Flex Path was an innovative energy upgrade option developed and administered by the LA County team using ARRA funding. This pilot program provided more flexibility than the Basic Path, and used the

same list of eligible Basic and Advanced Path measures in a user-friendly, prescriptive, point value menu format. The program was intended to test market acceptance of a simple, flexible prescriptive approach in terms of engaging both homeowners and contractors. EUCLA provided a $1,500 incentive for a Flex Path project, and homeowners also qualified for individual measure utility incentives. The ARRA funded Flex Path program was fully subscribed with 1,650 approved projects and a wait list of 187 project applications on October 19, 2012, just nine months after program launch. LA County paid out all qualified project applications early in 2013 using remaining ARRA funds for a total of 1,837 projects.

SoCal REN has been authorized to continue the current Flex Path pilot design in LA County until the April 1, 2013 Advice Filing is approved. The program could be re-launched within three weeks of authorization to proceed; however, this is not the REN's preferred course of action. The REN proposes a modified Flex Path program that is fully compliant with the final decision. The final decision has mandated that the following design elements be incorporated into a Basic Path replacement program:

- Require that each project include at least three qualifying energy efficiency measures;
- Include scaled or tiered incentives;
- Support the energy efficiency loading order that provides that building shell envelope improvements generally occur first; and
- Support appropriate combustion safety testing protocols.

SoCalREN ARRA Flex Path Program Overview

In discussions with the IOU's, SCE and SCG have made it clear that they intend to pilot an enhanced Basic Path pilot program immediately after the April 1 advice filing date. The REN requests the same consideration to implement the ARRA Flex Path program design using ratepayer funds with slight improvements immediately upon approval by Commission staff. The minor modifications are intended to mitigate Commission concerns about overpaying for energy savings and include the following:

1. Eliminate all five-point measures and require or recommend them as best practices in appropriate equipment replacement or system upgrade measures.
2. Recommend thermal control valves (TCV) be installed on all showers in the home.
3. Reduce the program incentive from $1,500 to $1,000.

This will serve to extend what is a successful pilot, enhanced to provide a bridge to the Home Upgrade program design being proposed in this advice filing. In addition, continuing with a slightly modified Flex Path pilot, with the same name, will provide significant, additional data for evaluation and program design going forward. While the REN's and IOU's did not come to complete agreement on a single program design statewide, substantial progress has been made on coming to agreement on major program design elements.

A. Tracking Energy Usage

With the help of the IOU's, the REN hopes to track actual energy usage of Flex Path participants. The success of Flex Path and its approval by the U.S. Department of Energy and the California Energy Commission regarding design and achievement of program savings objectives, clearly demonstrates that a government entity is perfectly capable of designing, developing, and implementing a successful community scale energy efficiency incentive based program.

B. Moving Homeowners To Action

Flex Path served to augment the under-utilized Basic Path to put homeowners on the path toward a whole house energy upgrade and provides contractors with a simple introductory offer that can be used to upsell a homeowner to a more comprehensive, Advanced Path retrofit. This feature will continue to be tested during 2013-14. The program also encourages more contractors to become active in EUC with the goal of expanding their participation over time and bringing the EUC program to scale. Flex Path is a contractor delivered program and therefore does not require a large marketing and outreach budget.

C. Qualifying Measures

To participate in the Flex Path, two or more qualifying retrofit measures with a combined point total of one hundred or more had to be installed using a EUC participating contractor. Flex Path motivated contractors and homeowners to consider higher levels of efficiency (beyond code) when selecting new equipment or upgrading envelope systems. Under the proposed Home Upgrade program the REN may add a walk-through energy audit component (draft audit form displayed in Attachment D) to the program delivery, creating a roadmap and priority of additional projects that can be done over time or providing the justification for moving to an Advanced Path project. The ARRA Flex Path program includes the measures listed in the table below, edited for five-point measures requested to be removed, along with pre-and-post retrofit requirements and point values.

ARRA Flex Path Measure List

To participate in Flex Path, homeowners had to install two or more qualifying measures with a combined point value of 100 or greater using an Energy Upgrade California Participating Contractor. All Flex Path projects required installation of a thermostatic shut-off valve on all showers in the home except when installing a tankless water heating system. Limit two Flex Path applications per household.			
I. Insulation & Air Sealing			
Retrofit Measure	**Pre-Retrofit Condition**	**Post-Retrofit Condition**	**Point Value**
Crawlspace insulation	No insulation	≥ R-11 Supporting documentation required for close out: specification sheet, before & after photos	55
Wall insulation	No insulation	≥ R-13 Supporting documentation required for close out: specification sheet	90
Air sealing	CFM50 ≥ 1900	CFM50 ≤ 1100 Supporting documentation required for close out: blower door test-in results, blower door test-out results, combustion safety test results	30
Attic insulation & sealing	≤ R-11	≥ R-38 Supporting documentation required for close out: specification sheet, before & after photos. It is highly recommended that all incandescent recessed can lighting fixtures be replaced with ENERGY STAR® CFL	45

		fixtures or ENERGY STAR® LED fixtures.	
Attic radiant barrier	No radiant barrier	Continuous rolled or prelaminated Supporting documentation required for close out: specification sheet, before & after photos	50

II. Heating, Ventilation, & Air Conditioning

Retrofit Measure	**Pre-Retrofit Condition**	**Post-Retrofit Condition**	**Point Value**
Replace existing central forced air furnace with new ENERGY STAR® central forced air furnace	Gas-fired; AFUE ≤ 0.80	ENERGY STAR®; Gas-fired; AFUE ≥ 0.95 Supporting documentation required for close out: specification sheet, before & after photos including nameplate	90
Replace existing central AC with new central AC	≤ 10 SEER	≥ 15 SEER 11 EER Supporting documentation required for close out: specification sheet, before & after photos including nameplate. Recommend replacement of a manual thermostat with digital, setback programmable model.	90
Replace existing heat pump with new heat pump	≤ 5.6 HSPF, 8 SEER 6 EER	≥ 8 HSPF, 15 SEER 11 EER Supporting documentation required for close out: specification sheet, before & after photos including nameplate. Recommend replacement of a manual thermostat with digital, setback programmable model.	90
Duct insulation & sealing OR Duct replacement with insulation	Leakage ≥ 28% ≤ R-4	Leakage ≤ 15%; ≥ R-8 Supporting documentation required for close out: Duct Blaster® test-in results and test-out results, specification sheet, before and after photos. Recommend replacement of a manual thermostat with digital, setback programmable model.	95

III. Windows

Retrofit Measure	**Pre-Retrofit Condition**	**Post-Retrofit Condition**	**Point Value**
Replace all windows to be ENERGY STAR®	Single metal clear pane (U-factor ≥ 1.19; SHGC ≥ .83)	ENERGY STAR®; U-Factor ≤ 0.40; SHGC ≤ 0.30 Supporting documentation required for close out: specification sheet, before & after photos	65

IV. Domestic Hot Water

Retrofit Measure	Pre-Retrofit Condition	Post-Retrofit Condition	Point Value
Domestic hot water heater (gas)	Gas-fired tank heater; EF ≤ 0.525	Gas-fired; EF ≥ 0.62 Supporting documentation required for close out: specification sheet, before & after photos including nameplate. Must include pipe wrap for first five feet of exposed pipes.	45
Domestic hot water heater (electric)	Electric tank heater; ≥ 40 gallons; EF ≤ 0.88	EF ≥ 0.93; ≥ 30 gallons Supporting documentation required for close out: specification sheet, before & after photos including nameplate. Must include pipe wrap for first five feet of exposed pipes.	90
ENERGY STAR® whole house tankless hot water heater (gas)	Gas-fired tank heater; EF ≤ 0.525	ENERGY STAR®; gas-fired; EF ≥ 0.82 Supporting documentation required for close out: specification sheet, before & after photos including nameplate. Must include pipe wrap for first five feet of exposed pipes.	90
V. Lighting			
Retrofit Measure	**Pre-Retrofit Condition**	**Post-Retrofit Condition**	**Point Value**
VI. Cool Roof			
Retrofit Measure	**Pre-Retrofit Condition**	**Post-Retrofit Condition**	**Point Value**
Cool roof	≤ R-11	All of the following requirements must be met for ≥ 75% of the roof over conditioned space: ≥ R-38; Low slope (≤ 2:12): SRI≥ 70, Thermal Emittance Factor ≥ 0.85; Steep slope (> 2:12): SRI ≥ 40; Thermal Emittance Factor ≥ 0.85 Supporting documentation required for close out: specification sheet, before & after photos	40

Flex Path was marketed to homeowners primarily through contact with EUC participating contractors. By educating all EUC participating contractors and targeting specialty building service companies, the workforce is able to sell the program directly to homeowners. When the program ended in October 2012, there were 57 contractors actively participating in the Flex Path pilot. The fact that only 15 of

these contractors had delivered both an Advanced or Basic and a Flex Path project demonstrates that this simple approach succeeded in getting more EUC contractors off the sidelines and into the game. Since there are many different combinations of retrofit measures that can make up a Flex Path project, the program structure allowed each contractor to develop a business model that works for them, or partner with other contractors to provide a wider array of upgrade options. Another delivery channel was the Flex Path webpage, www.energyupgradeca.org/LAflex on the EUC Los Angeles web site. This webpage encouraged contractors and homeowners to participate in the program using Frequently Asked Questions, a Qualifying Measures list, information about Supplemental Utility Rebates, an Online Application, and the Project Completion Form.

D. Incentive Structure

Flex Path projects received an incentive of $1,500. SoCalREN proposed to reduce the incentive amount to $1,000 should the program have been reinstated until such time as a Basic Path replacement program was approved by the Commission. The incentive amount cannot exceed project cost. The average cost of a Flex Path project was about $5,800. Modeled energy savings predicted an average energy savings of 15 percent for a typical home in a typical LA County climate zone. This level of energy savings, along with an estimation of average project cost, was used to determine the incentive amount of $1,500. When a completed application was received, the incentive funds were reserved for 60 days. When installation was complete, the contractor submitted an online Project Completion Form that included uploading required supporting documentation. Required supporting documentation included an itemized, paid invoice and, if applicable, before and after photos, specification sheets, diagnostic test-in/test-out results and proof of a combustion appliance safety test conducted by a BPI certified building analyst.

E. Project Tracking

The program administrator uploaded customer and project data into a secure, closed-loop program tracking database (energyOrbit) and monitors progress throughout the application process. When any of five status codes changed on a Flex Path project, the tracking system automatically sent an email status notification to both the homeowner and contractor. If all program requirements were met after a review of the Project Completion Form, required supporting documentation, and Quality Control on-site inspection, a Flex Path project was approved and a check request was processed with LA County. Checks were routinely paid by LA County within two weeks of project completion approval.

F. Quality Assurance

Flex Path Quality Assurance included one hundred percent desktop review of the Utility Service Account Holder and Participating Contractor information, the project application; the Project Completion Form and supporting documentation. After a Flex Path project completed desktop review of the Project Completion Form and required supporting documentation, the project may have been selected for an onsite post-installation inspection. The sampling rate for Flex Path Quality Control post-installation inspections followed the Home Performance with ENERGY STAR inspection guidelines. In the ARRA Flex Path program LA County conducted 100 percent post-installation inspections for the first three months to ensure contractor compliance with terms and conditions before reducing the sampling rate, and actually achieved an overall on-site post-installation inspection rate of about 15 percent. The on-site visit included a visual inspection of the measures installed, verification that any mechanical equipment installed matched submitted specification sheets and program requirements, and a brief oral survey with the homeowner regarding overall program and contractor satisfaction. If a test-out was required for any of the installed measures, this triggered an inspection that included a BPI certified Quality Control professional witnessing the diagnostic testing performed. Examples of Flex Path test and inspection forms are included in Attachments A through C. The REN also planned to perform field QC using a HERS/BPI certified

professional in the Home Upgrade program to confirm that installed measures met industry best practices and provide mentoring to contractors that might need additional training.

The REN worked with the IOU's and CPUC staff to determine reasonable measure level savings values, QA and QC requirements, and EM&V data collection objectives. Flex Path offers an excellent opportunity to continue testing this flexible approach in the residential marketplace, refine kWh savings, kW demand reduction, and therm savings numbers by measure, vintage, and climate zone. With funding being reduced by 50% LA County is now proposing a 2,376 retrofit pilot with estimated energy savings of 1,985,417 kWh based on savings values calculated using EnergyPro with DEER and RASS data; a method similar to what was used to derive Basic Path measure level energy savings values. Revised targets are shown in Figure 4.

Figure 4 (Subprogram A): Flex Path Proposed Net Energy Savings

Resource Acquired	2013	2014	Total
kWh Energy Savings	794,326	1,191,091	1,985,417
Peak kW Demand Reduction	912	1,367	2,279
Therm Savings	55,928	84,007	139,935

Program Successes through December 2012

In nearly nine months of operation, the number of Flex Path projects far exceeded the number of Advanced and Basic Path projects combined that were paid a matching incentive by LA County. This is significant because the IOU programs had been available to homeowners for 19 months at the time Flex Path ended. It should be noted that Flex Path was not been featured in the County's marketing materials or media campaigns, and promotion was limited to training contractors and distributing flyers at community

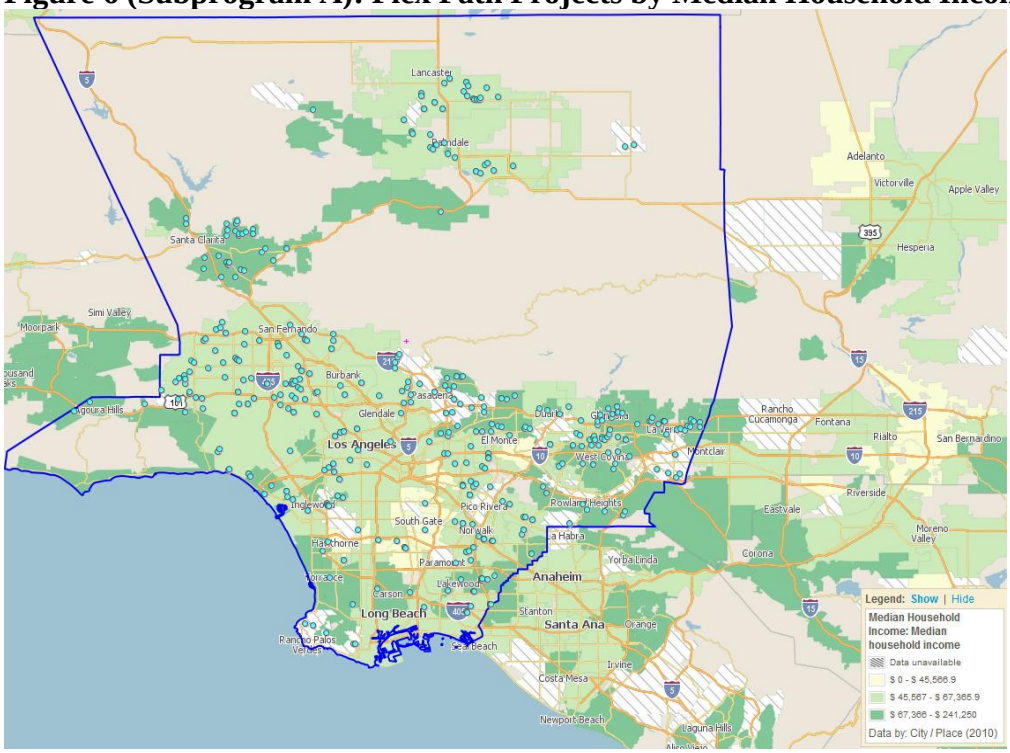
events alongside Advanced Path and Basic Path promotional materials. Figure 5 presents the important metrics for Advanced, Flex, and Basic options in LA County.

Figure 5 (Subprogram A): Breakdown of retrofit projects paid by LA County through February 2013

Retrofit Project Type	% of Total LA County Projects Paid	# of LA County Projects	Average Savings	Average Cost	Average Rebate (Utility + LA County)
Advanced Path	36%	1,048	31%	$12,685	$5,458
Flex Path	63%	1,793	17%	$5,875	$1,500
Basic Path	1%	21	10%	$4,202	$2,000

One of the most exciting successes of Flex Path to date is the clear indication that the program made great strides in penetrating the lower-middle and middle-income homeowner markets. This is essential for scaling up EUC to achieve a much greater volume of projects. This will help to transform the market, reaching California Long Term Energy Efficiency Strategic Plan goals, and creating much needed new jobs. The map below shows the distribution of Flex Path projects in LA County overlaid on median household income census data.

Figure 6 (Subprogram A): Flex Path Projects by Median Household Income in LA County



Contrary to the relatively narrow demographic adoption of Advanced Path, Flex Path has achieved an impressive penetration across LA County, particularly in lower-middle and middle-income communities. The REN proposed to target limited marketing and outreach to these communities and assist contractors in focusing Flex Path sales on middle-income homeowners. In expanding the Flex Path program or the Home Upgrade program throughout the SCE/SCG service territories the REN also proposed to target inland climate zones where comprehensive energy retrofits would result in greater benefits for homeowners.

To determine expected energy savings for Flex Path prescriptive measures, the LA County team used EnergyPro software to model each measure individually assuming a typical Los Angeles County single family detached home configuration based on RASS data to represent the pre-retrofit baseline. The assumptions from the EnergyPro analysis are as follows:

1. Climate Zone: 9 (Claremont used as base city)

2. Area: 1710 sq ft
3. Ceiling Height: 8 ft
4. House Dimensions: 38 ft x 45 ft
5. Perimeter: 166 ft
6. Winter Indoor Temp: 70
7. Summer Indoor Temp: 74
8. Infiltration: 1800 CFM50 (~0.57 ACHn)
9. Duct Insulation: R-4
10. Duct Leakage: 28%
11. Attic Insulation: R-11 (using default for pre-1978)
12. Wall Insulation: R-0
13. Crawlspace Insulation: R-0
14. Windows: Single Metal Clear
15. HVAC: Gas-fired, 0.80 AFUE, 10 SEER 6 EER
16. DHW: Gas-fired, 50 gal. 0.525 EF
17. Setback thermostat (except for thermostat measure)
18. Electric stove, washer/dryer in house

The success of the ARRA Flex Path was the direct result of the simple, menu driven program design and simple delivery method. The REN encourages the Commission to adopt a program design that is easy for homeowners to understand and simple for contractors to deliver. Energy efficiency projects are sold at the kitchen table, and few homeowners have an understanding of how investing in energy efficiency or a whole house upgrade will benefit them. A simple program design will sell more projects, and result in more satisfied ratepayers. Market transformation is a long process that must engage all market actors with the

fewest barriers to entry as possible, while still maintaining a high standard of quality and emphasis on building science principles.

Home Upgrade program

Overview

The Home Upgrade program builds on the success of the ARRA Flex Path pilot program implemented under Energy Upgrade California (EUCLA) in Los Angeles County, and expands this innovative point based prescriptive program design to accommodate and encourage more comprehensive upgrade projects. The Flex Path approach was developed as a response to poor market penetration by both the Basic Path and Advanced Path programs previously offered as part of EUC by investor owned utilities (IOU(s)) in Los Angeles County. The Los Angeles County team first introduced a modified Flex Path program (Home Performance Flex Path) concept that included a tiered incentive structure and a calculated energy savings methodology by vintage and climate zone in July 2012. This original program concept has now become the Home Upgrade program presented in this program implementation plan.

The program supports the EE loading order with 1 of 3 envelope Base Measures.

SoCalREN and the IOUs reached agreement on a single program design and delivery method for a modified basic program. Both the REN and IOU program designs have the same three envelope Base Measures which include Whole House Air Sealing, Attic Insulation and Air Sealing, and Duct Sealing or Duct Replacement. The statewide IOU and REN teams agree on a program design that requires 1 of 3 Base Measures and a minimum of 3 total measures. The REN provided engineering workpapers, and submitted a revised E3 Calculator supporting the 1 of 3 Base Measure design as part of the January 14, 2013 compliance filing. These work papers were not approved, and the RENs have agreed to use the approved

IOU workpapers. The RENs continue to work with the Energy Division Ex-Ante team to correct the methodology in its workpapers and hope to have them approved at some time in the future.

Program Design

The Home Upgrade program offers a balanced approach intended to produce a high volume of retrofits while maintaining a reasonable level of technical rigor and quality assurance. The proposed program will:

- Support the energy efficiency loading order with 1 of 3 Base Measures and requiring Duct Sealing and Insulation or Duct Replacement with HVAC equipment replacement to support an HVAC core system upgrade
- Provide a flexible tiered incentive approach of $10 per point up to $3,000 (shown in Figure 5 below) which still allows the contractor to upsell to the Advanced Path if desired by the homeowner
- Penetrate the lower-middle and middle-income homeowner markets with a simple, menu driven approach that will greatly increase the volume of projects
- Maintain high standards of Quality Control consistent with IOU and industry best practices and promote homeowner safety with pre-and-post-installation combustion appliance safety testing to BPI standards
- Maximize ratepayer benefits by creating an on-ramp for both homeowners and contractors while minimizing lost opportunities

Figure 5- Proposed Flexible Tiered Incentive Structure (Examples)

Measures	Total Points	Total Incentive Amount
Duct Replacement; Air Conditioner; Furnace; Whole House Air Sealing (second Base Measure)	**250**	**250 X $10 = $2,500**
Attic Insulation and Attic Plane Sealing; Whole House Air Sealing (second Base Measure); Wall Insulation; Floor Insulation	**220**	**220 X $10 = $2,200**

The 1 of 3 envelope Base Measure approach guarantees that 100 percent of homeowners will implement at least one envelope (building shell) measure. The Home Upgrade program will also require that HVAC equipment projects include Duct Sealing and Insulation or Duct Replacement.

This simple, flexible design is expected to greatly increase the volume of projects over the Basic Path. The Home Upgrade program is flexible enough to allow some homeowners to focus on envelope improvements while others focus on completing core system upgrades. Contractors will be trained and encouraged to develop work scopes that go beyond core systems and include more envelope measures. The 2013-2014 transition period gives the Commission the opportunity to test a program design that will achieve a higher volume of retrofits and reasonably support the energy efficiency loading order.

The Home Upgrade program requires that HVAC equipment projects include Duct Sealing and Insulation or Duct Replacement.

The Home Upgrade program also introduced a bonus measure for right-sizing of HVAC equipment to support the EE loading order for core systems and test market acceptance of this approach outside a formal Quality Installation requirement. This measure was not accepted by the IOUs and workpapers were not approved by Energy Division. This measure will require further engineering analysis. Again, the REN wishes to use the transition period to try an innovative program design to see what works and what does not, and one that does not unnecessarily limit participation. The challenge in any program design is finding the right balance between volume and building science priorities. Lessons learned will be few if homeowner participation is low. The Commission cannot afford another two years of learning only what does not work.

SoCalREN has made a number of changes to the program, effective February 17, 2014, that are intended to expand the contractor base to include more specialty contractors, increase homeowner interest in the program, and help contractors be more profitable on each project. The changes are as follows:

- Increased Incentive Cap from $2,500 to $3,000
- Implemented a $150 CAS/CAZ Testing Incentive for Contractors
- Flexible Incentive Structure: $10 per point (up to $3,000)
- Eliminated Extra Shell Measure for HVAC Projects

The Home Upgrade program is intended to de-mystify the whole house energy efficiency upgrade approach. The program may offer a homeowner education component that will explain the benefits of the EE loading order and encourage homeowners to undertake a whole house energy upgrade in steps as their budget allows. Contractors may perform a walk-through audit that will serve as an energy efficiency roadmap for the homeowner that provides a comprehensive list of measures for future implementation. A draft of the walk-through audit form is presented in Attachment D. The energy efficiency roadmap provides contractors with an expanded customer base that promotes long term job stability and repeat business.

The Home Upgrade program addresses the barriers to entry into the home performance upgrade market and is intended to facilitate driving EUC to scale statewide.

- Home Upgrade is a prescriptive incentive program that eliminates the need for energy modeling of a home, reducing the number of visits by contractors and QC inspectors to the home by at least half over the Advanced Path.
- Home Upgrade is a points-based approach that gives homeowners and contractors the flexibility they need to bundle measures as their needs and budget allow while still supporting the energy efficiency loading order.
- Homeowners are able to do several energy efficiency upgrade projects over several years and prioritize upgrades that meet their needs, thereby dramatically increasing the number of middle-income homeowners that can be engaged in the home performance upgrade path.

- Home Upgrade facilitates homeowner engagement and energy efficiency education over a longer period of time and provides contractors with a base for repeat business that creates more jobs and makes employment more sustainable.
- The streamlined, prescriptive approach allows program implementers to handle a much greater volume of home performance upgrades at a lower cost, and has proven to increase customer satisfaction.
- The Home Upgrade program will be integrated with existing financing products, and loans can be funded in weeks as opposed to months.
- Home Upgrade solves the problem of mechanical equipment replacement on burn-out and provides incentives to move homeowners up to a higher level of efficiency; and a trained contractor pool is ready with the right equipment.
- Home Upgrade will allow more contractors to get involved in the program, create more green jobs, and accelerate market transformation.

> The REN has eliminated all five-point measures from the Flex Path prescriptive menu and have included them as required or recommended best practices in applicable equipment measures.

- Home Upgrade focuses workforce development on contractor quality installation and improving home performance best practices, not energy modeling that is controversial at best. Key design elements include the following:
  - Three or more qualifying measures must be installed using a combination of Base and Flex Measures as described in Figure 8 below.
  - The Home Upgrade program requires that HVAC equipment projects include Duct Sealing and Insulation or Duct Replacement.

- The three selected measures must have a combined point value of 100 to meet the minimum $1,000 incentive threshold, and up to 300 points for the maximum $3,000 incentive (calculated at $10 per point).
- All five-point measures have been eliminated from the ARRA Flex Path program design.
- Work must be performed by a EUC Participating Contractor.
- Projects must provide proof of all applicable building permits and adhere to all local, state, and federal laws and building codes.
- All projects require 100% pre-and-post-combustion safety testing regardless of measures installed, and must be performed by a BPI certified Building Analyst (BA) as directed by Energy Division staff. SoCalREN will provide a CAZ testing incentive to contractors to help offset the added cost of pre-installation testing.
- Homeowners must be an active IOU account holder, and may choose to have the incentive paid directly to the Participating Contractor.

Program requires 100% pre-and-post-combustion safety testing for all projects regardless of measures installed as directed by Energy Division staff.

The RENs and IOUs agree that all five-point measures offered in the ARRA Flex Path program will be eliminated. It is also agreed that the measures do offer value to homeowners as best practices and Figure 7 describes the proposed disposition of each five-point measure.

Figure 7: Proposed Disposition of ARRA Flex Path Five-Point Measures

Flex Path Five-Point Measures to be Removed	Flex Path Requirement	Proposed Disposition
Programmable Thermostat	Energy Efficient Programmable Thermostat(s); Serves Entire Conditioned Area	Recommend replacement of a manual thermostat with digital, setback programmable model.
Low Flow Showerheads	Low Flow Showerheads ≤ 1.5 gpm; Bathroom Faucet Aerators ≤ 1.5 gpm; Kitchen Faucet Aerators ≤ 2.2 gpm	Recommend installation of a thermostatic control valve (TCV) on all showers in the home except when installing a tankless water heating system, and a low flow shower head on all showers. Installation of kitchen and bathroom faucet aerators is also recommended.
Hot Water Pipe Wrap	Minimum First 5ft of Hot Water Pipe Wrapped	Recommend including pipe wrap for first five feet of exposed pipes, or in accordance with local code.
ENERGY STAR Lighting	Energy Star CFL or LED Fixture(s); Permanently Installed	Recommend that all incandescent recessed can lighting fixtures be replaced with ENERGY STAR® CFL fixtures or ENERGY STAR® LED fixtures.

The Home Upgrade program also proposes to provide a bonus to the homeowner for installing more than one Base Measure. The first additional Base Measure (2 of 3) will receive a bonus of 15 points and the second additional Base Measure (3 of 3) will receive a bonus of 20 points. The measure point values and bonuses are cumulative. Figure 8 below summarizes how the Base Measure Bonus will add value to a project and drive more envelope measures.

Figure 8: Example of Base Measure Bonus Structure

Number of Base Measures	Base Measure Description	Base Measure Points	Bonus Points Added	Measure Points	Cumulative Total Points
1 of 3	Attic Air Sealing and Insulation	55	Base Measure Points Only	55	55
2 of 3	Duct Replacement	65	Base Measure Points + 15 Bonus Points	55+65+15	135
3 of 3	Whole Building Air Sealing (≥ 30% leakage reduction from vintage table defaults)	45	Base Measure Points + 20 Bonus Points	135+45+20	200

The REN supports the IOU's in the development and limited piloting of a software tool that a contractor can use to calculate project points and percentage of energy savings based on basic characteristics of each home, vintage, and climate zone, provided the RENs are not required to use it. The currently proposed REN data management system will not support the use of this tool. In addition, the REN feels this approach is too complicated for homeowners to understand, as it is technically a calculated method that could result in different energy savings values and incentive amounts for each home. The REN would prefer to offer the same simple, prescriptive, points based menu approach to all homeowners and do virtually the same calculated energy savings calculations on the back end for the purpose of claiming savings and providing project specific data to Energy Division staff. The reason the ARRA Flex Path program was successful is because it was very simple and easy for homeowners to understand. The Home Upgrade measures in Figure 8 below include post-upgrade conditions and point values.

Qualifying Measures

Category	Upgrade Measure	Technical Specifications	REN Point Value
Base Measures (1 or more)	**Duct Sealing**	Seal to ≤10% for existing systems	**25**
	Duct Replacement*	Seal to ≤6% for replacement ducts	**65**
	Whole Building Air Sealing	≥15% leakage reduction from vintage table defaults	**25**
	Whole Building Air Sealing	≥ 30% leakage reduction from vintage table defaults	**45**
	Attic Insulation & Air Sealing	Insulation ≥ R-38	**55**
Base Measure Kickers	**2nd Base Measure**	Total of two base measures	**15**
	3rd Base Measure	Total of three base measures	**20**
Flex Measures	**Wall Insulation**	Insulate ≥R-13	**50**
	Floor Insulation	Insulate ≥R-19	**55**
	Duct Insulation	Insulate ≥R-8	**40**
	Furnace	≥95% AFUE	**60**
	Air Conditioner	≥15 SEER/12 EER	**65**
	Gas Storage Water Heater	EF ≥0.67	**35**
	Gas On-Demand Water Heater	EF ≥ 0.82	**90**
	Electric Storage Water Heater	EF ≥ 0.93	**40**

***May be counted as two measures; equivalent to Duct Sealing (Base Measure) and Duct Insulation (Flex Measure).**

Both the REN and IOU programs require 100% pre-and-post-combustion safety testing for all projects regardless of measures installed as directed by Energy Division staff. IOU/REN collaboration has resulted in a number of agreements that will allow the partners to move quickly to implement a single Basic Path replacement program and other vital EUC support services in SCE and SCG service territories.

SoCalREN has worked closely with SCE and SCG to reach an unprecedented level of cooperation that serves to leverage the substantial investment made by LA County in Energy Upgrade California. SoCal REN appreciates Energy Division's approval of the Home Upgrade program with its 1 of 3 Base Measure approach in order to continue piloting a simple, flexible program design that will provide invaluable market penetration data to inform the next generation of whole house upgrade programs and move the statewide team closer to sustainable market transformation.

Geographic Territory

In recognition of the final decision which states that, "we would like to see the REN proponents and the IOUs work together to design a programmatic approach that covers all of the geographic areas of the IOU service territories with a seamless set of offerings. This means that the RENs would implement the Home Upgrade in the geographic areas that they cover, while the IOUs would implement the program in the rest of their territory," SoCalREN proposes to eventually operate the Home Upgrade program in all the geographic areas it serves. The final decision goes on to explain that, "The vision for RENs is that they are *regional,* which, in the context of defining a REN, means that they represent several local government entities and not just one or two. For example, BayREN and SoCalREN represent two of the most populous regions of the state, encompassing multiple city and county governments within their structures."

SoCalREN has clearly established its territory as being that of the joint service territories of SCE and SCG for all of the SoCalREN services; however, for the Home Upgrade program, the REN will start by implementing the program only in the joint SCE and SCG service territories within L.A. County and will expand into other counties within the SoCalREN territory as the program shows success. Future REN expansion will be negotiated with SCE and SCG based on program performance metrics to be jointly determined. SCG will administer the program in municipal electric utility territories; SCE will administer the

program in municipal gas territories. SCE and SCG will administer the modified Basic Path in territories that are shared with PG&E and SDG&E. Non-resource programs (contractor related outreach, green building labeling, audit subsidies, vouchers, marketing/outreach, etc.) are assumed to be IOU territory-wide. The REN will work with the IOU's to eliminate duplication and provide REN services where they provide the greatest ratepayer benefit.

Marketing and Outreach

As demonstrated on the ARRA funded Flex Path program, very few specific marketing activities will be required to engage homeowners in the program. A program brochure may be produced for the contractor that explains the importance of the EE loading order, the benefits of a whole house energy upgrade, and the terms of participation in the program. Home Upgrade program messaging will be added to existing planned marketing and outreach activities and media promotions. A program specific web URL will be established to engage homeowners and contractors in participation in the program using Frequently Asked Questions, a Qualifying Measures list, an Online Application, and the Project Completion Form. The REN will work with contractors directly to promote and deliver the program.

The REN may engage in an email campaign to follow up with homeowners on recommended additional measures based on their energy efficiency roadmap.

Data Processing

EnergyOrbit is a cloud-based energy efficiency program management solution. Built on the Force.com platform, energyOrbit allows Demand Side Management (DSM) programs to be set up quickly and be managed with little overhead, while maintaining maximum flexibility. With both the broad functionality of the

Salesforce platform and the industry-specific customization of energyOrbit, the full life cycle of a program can be managed from online, portal-based application entry to post-retrofit communications. EnergyOrbit has been deployed by dozens of POUs, IOUs, cooperatives, and program implementation firms, including ComEd, PG&E and Santee Cooper.

The REN has proposed using energyOrbit to manage and track all REN programs. Previously used in Los Angeles County to administer the Flex Path program, the energyOrbit solution contains a number of turn-key features that facilitate fast program set-up and comprehensive program tracking. These features support customers and program administrators while satisfying program funding requirements and other stakeholder interests through comprehensive customer relationship management (CRM), automated work processes, and standardized energy calculation and analysis. EnergyOrbit supports the full life-cycle of a program with robust tracking and reporting capabilities. Examples of what energyOrbit supports include:

- Full spectrum of efficiency technology measures
- Equipment management
- Contractor management
- Customer management
- Audit and work-order management
- Energy savings, installation costs and rebate savings for prescriptive and calculated measures
- Detailed reporting of program performance

In conjunction with energyOrbit's exclusive features, the tool is bundled with Salesforce CRM Enterprise Edition. Salesforce is the most comprehensive cloud-based CRM tool available, managing not only sales, but also marketing and customer service. Examples of how the REN will take advantage of these capabilities include:

- Call center management for contractor and homeowner support

- Automated status update emails based on event triggers
- Customized fields to support a walk-through audit
- Post-retrofit email campaign to follow up with homeowners on recommended additional measures based on their walk through audit and resulting energy efficiency roadmap

EnergyOrbit is a closed-loop system with extensive security features. Data can be locked down in a number of ways based on a broad data access model. At the baseline, organization-wide defaults restrict access to the bare minimum needed by all users. Salesforce also provides system security for physical, network, transmission, and application mechanisms, resulting in an ISO27001 security certification.

Based on the prior successful use of energyOrbit in Los Angeles County and the robust functionality of the system, the REN proposes to use this tool for the 2013-14 portfolio of programs. EnergyOrbit would support Energy Upgrade California (EUC) and financing programs including:

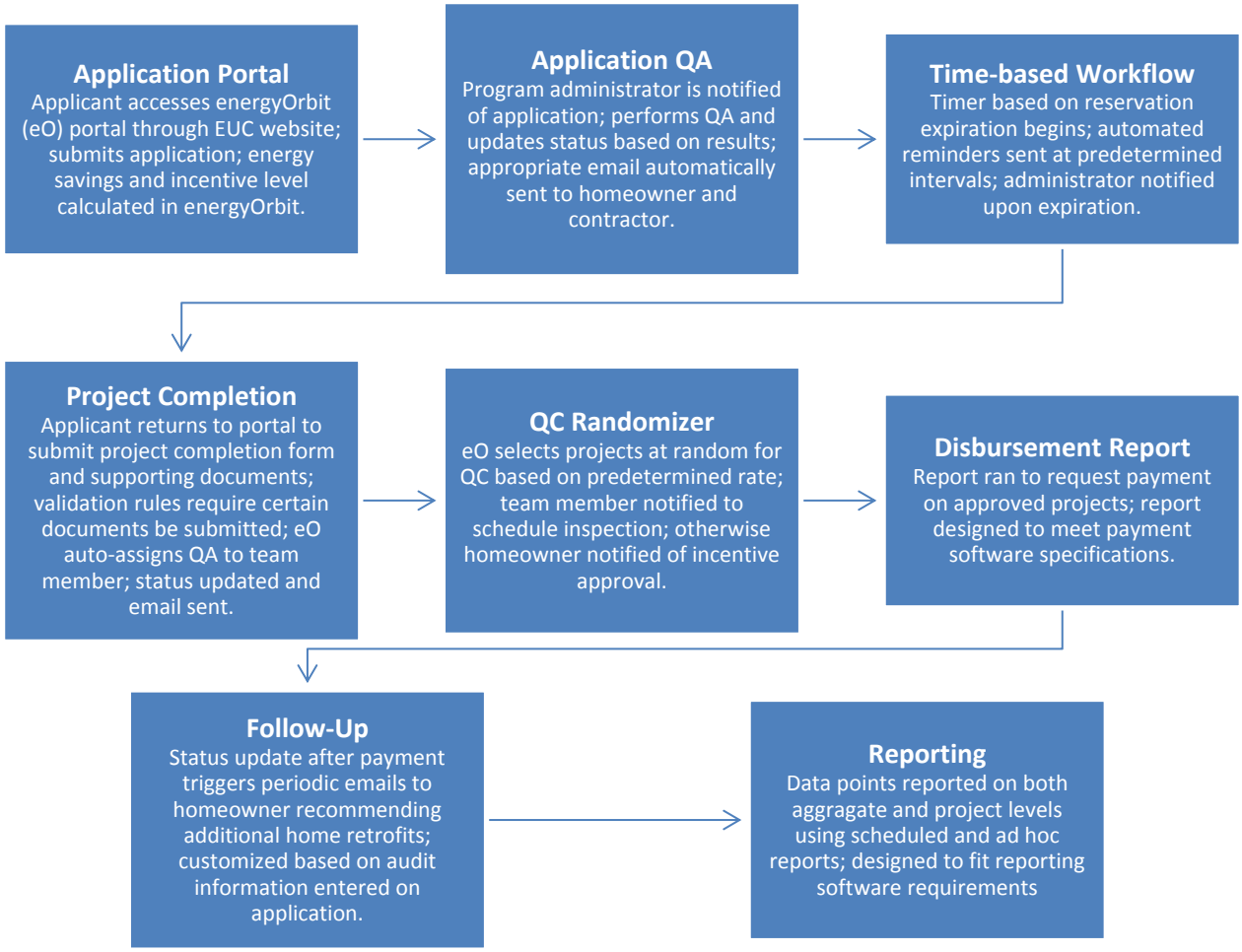
- Home Upgrade
- Multifamily
- HVAC
- Energy Champions
- CoOp Marketing
- Assessment vouchers
- Commercial PACE
- Single family LLR
- Multifamily LLR

Each program would be developed according to both program designs and relationships between programs to accurately report on both unique projects and connections between them. Projects in each program would be tracked seamlessly throughout their life-cycle, from application to incentive payment and

post-payment follow-up. SoCalREN will issue all incentive payments using the energyOrbit system and a third-party incentive payment fulfillment firm.

While each program will utilize different functionality, it may be illustrative to describe the process of how a project moves through the energyOrbit system. Figure 10 provides an example of this flow that is based on a hypothetical project in the Home Upgrade program.

Example of energyOrbit Process Flow



Application Processing and Quality Assurance

A comprehensive Quality Assurance (QA) Plan is an integral part of the Home Upgrade program. Quality assurance protects participants by providing an independent review of the work performed by the participating contractor to ensure that the installation meets industry best practices and program standards. The REN Quality Assurance Plan includes strategies to ensure that participating contractors are competent and that completed energy efficiency improvements meet program standards as follows:

- **Project Completion Form review process** that ensures compliance and provides follow up with the Participating Contractor where necessary.
- **Customer feedback mechanism** which allows the customer to provide program and contractor feedback directly to the Program Administrator.
- **In-field inspection protocols** including a sampling rate that is aligned with Home Performance with ENERGY STAR standards at a minimum.
- **Conflict Resolution Protocols** for responding to contractors' disputes with QA reports.
- **Record keeping and tracking** of results from in-field inspections, customer feedback and any corrective actions undertaken.

1. Flex Path Process

The Home Upgrade program will manage program participation in the following sequence:

- Contractor (or homeowner) completes project Application Form.
- Review of project Application Form. Submission of Application Form is necessary for 60 day reservation date to be issued by Program Administrator.
- Walk through audit and project work scope initiated and completed by participating contractor.
- Quality Control (witness of test-out results may be required for some measures).

- Contractor submits Project Completion Form (with required supporting documentation).
- 100% Desktop Quality Assurance Review of Project Completion Form and Supporting Documentation.
- Quality Control (In-field inspection).

Figure 11 outlines the 12-step desktop quality assurance review that will be undertaken for every Flex Path Application Form received.

Figure 14: Quality assurance procedure for desktop review of Application Form

Step	Review	Action
1	Alert created if Utility Service Account number is the same as another EUCLA project	The program administrator will check the Utility Service Account number provided against all other EUCLA projects. If an application is found with the same Utility Service Account, then the program administrator will review the scope of work for each application and confirm that they are different.
2	Utility Service Account Holder address is within Los Angeles County	The program administrator verifies that address provided is within Los Angeles County and is a single family detached home.
3	Utility Service Account Holder has not received an incentive for the same measure(s) in the past five years	The REN will work with the IOUs to share data regarding previous participation in IOU programs. Every application will be checked for previous participation at the measure level.
4	Contractor has valid contractor's license	Program administrator confirms that contractor is on the Participating Contractor list. A valid contractor's license is confirmed during the Participating Contractor application process in the Energy Upgrade California Program.
5	Contractor has performed walk through audit	Program administrator confirms that Contractor has submitted a completed walk through audit form.

Step	Review	Action
6	Utility Service Account Holder's email address functions	Upon application submittal, a manual email will be generated to the Utility Service Account Holder's email address. Program administrator will see if the email is undeliverable.
7	Utility Service Account number is in correct format for electric utility selected	The program administrator will verify the account number provided against the known number of digits for selected utility provider.
8	Utility Service Account number is in correct format for gas utility selected	The program administrator will verify the account number provided against the known number of digits for selected utility provider. If it is not in the correct format, and the homeowner or contractor informs the program administrator that there is no gas utility service to the property, then this is acceptable.
9	Utility Service Account address is within electric utility territory selected	Confirm that the city is listed within Los Angeles County, and not served by Los Angeles Department of Water and Power or other municipal utility provider.
10	Utility Service Account address is within gas utility territory selected	Confirm that the city is listed within Los Angeles County, and is not served by a municipal utility.
11	Measures selected in application are deemed qualifying measures	The program administrator will verify that at least one Base Measure is selected and a total of three or more retrofit measures have been selected and that their combined point value is 100 or greater.
12	Electronic signature matches utility service account holder's name	The program administrator will verify that the Utility Service Account holder name matches the electronic signature on the application.

2. Other Eligibility Requirements

Another eligibility requirement that is included in the program design, website, and marketing material: new construction and major (gut) rehabilitation cannot apply for the Home Upgrade program.

3. Review of Project Completion Form

After installation of the Qualifying Measures agreed to in the Application Form is complete, the participant will be required to close out their application by completing a Project Completion Form. The purpose of this form is to ensure that program requirements for pre-and-post-retrofit conditions have been met, an itemized invoice has been paid in full, proof of pre-and-post combustion appliance safety testing, and all additional supporting documentation required for each measure has been submitted. In the case of a homeowner not being able to pay the full amount at the time of project completion, proof of financing is acceptable in lieu of a paid invoice. To satisfy the invoice requirements, a written copy of the financing agreement, signed by both parties, must be submitted to the Program Administrator as part of the supporting documentation package.

Once a Project Completion Form is submitted through the EUCLA website, an application processor will review all supporting documentation to verify the required documents have been submitted in compliance with pre-and-post-retrofit conditions.

At the point of downloading the Project Completion Form information from the website, the application processor will ensure that a note is made in the file if the project cost does not equal or exceed the total amount of the Flex Path incentive. The processor will also verify that regularly-permitted measures have a permit number included, and if not a note is made in the file and the contractor is contacted.

For air sealing and duct insulation and sealing, the Participating Contractor will submit test-in and test-out results using a downloadable Excel file located in the Project Completion Form section of the website. After filling in the appropriate information into the Excel document entitled Flex Path Test-In and Test-Out Templates, the contractor will upload the file into the Project Completion Form. Flex Path Test-In and Test-Out Templates will be the file that the quality assurance professional will use to review Combustion

Safety Test-In and Test-Out results, Duct Blaster Test-In and Test-Out results, and Blower Door Test-In and Test-Out results.

Attachment A provides examples of existing Flex Path Test-In and Test-Out Templates which are provided in Excel format for participating contractors to complete and submit, and are available for use on the Home Upgrade program. Attachment B describes the process related to the review of test-In and test-Out documents. The in-field quality control selection protocol is described in Attachment C. Attachment D presents a draft of the proposed walk through audit template.

Attachment A: TEST FORMS

Figure A1: Combustion Safety Tests (CST) – Pre-Retrofit

COMBUSTION APPLIANCE SAFETY / COMBUSTION APPLIANCE ZONE TESTING								
PRE-RETROFIT								
In each box, please enter "PASS", "FAIL," the value requested or "N/A" (i.e. no blank boxes). N/A is the appropriate response only if there is no such combustion appliance to test. Explain all responses of "N/A" in the NOTES section. Any combustion device that is not on this form (e.g. fireplace insert) should be listed under "other" as necessary and explained in NOTES.								
Date of Combustion Safety Test-Out:								
BPI Building Analyst Performing Test-Out:								
Phone Number of BPI Professional:								
Outside Temperature at Time of Testing (in degrees F):								
	Worst Case Depressurization Test Results			**Natural Conditions Test Results (if failed Worst Case)**				
	Spillage	Draft (Pa)	CO (ppm)	Spillage	Draft (Pa)	CO (ppm)	Flue Inspection	Action Required*
Heating System 1								
Heating System 2*								
DHW System 1								
DHW System 2*								
Other*								
	location of testing	CO Ambient (ppm)	Base Pressure (Pa)	Worst Case pressure (Pa)	Final Net CAZ Depressurization	Limit for CAZ	Result	Action Required*
CAZ 1								
	list of CAZ 1 appliances:							
CAZ 2*								
	list of CAZ 2 appliances:							
Gas Leak Testing:				Leakage Notes:				
	Kitchen	Other*	Action Required					
Ambient CO (ppm)								
	Fuel*	CO (ppm)	Vent Out?	Action Required				
Oven								
Range								
Other Appliance								
	Fuel*	Gas Properly Vented	Action Required					
Dryer Vent								
NOTES:								
***As needed, list additional systems/zones/actions in the notes section; identify other system/fuel types in the notes section**								

Figure A2: Combustion Safety Tests (CST) – Post-Retrofit

COMBUSTION APPLIANCE SAFETY / COMBUSTION APPLIANCE ZONE TESTING

POST-RETROFIT

In each box, please enter "PASS", "FAIL," the value requested or "N/A" (i.e. no blank boxes). N/A is the appropriate response only if there is no such combustion appliance to test. Explain all responses of "N/A" in the NOTES section. Any combustion device that is not on this form (e.g. fireplace insert) should be listed under "other" as necessary and explained in NOTES.

Date of Combustion Safety Test-Out:	
BPI Building Analyst Performing Test-Out:	
Phone Number of BPI Professional:	
Outside Temperature at Time of Testing (in degrees F):	

	Worst Case Depressurization			Natural Conditions Test Results (if				
	Spillage	Draft (Pa)	CO (ppm)	Spillage	Draft (Pa)	CO (ppm)	Flue Inspection	Action Required*
Heating System 1								
Heating System 2*								
DHW System 1								
DHW System 2*								
Other*								

	location of testing	CO Ambient (ppm)	Base Pressure (Pa)	Worst Case pressure (Pa)	Final Net CAZ Depressurization	Limit for CAZ	Result	Action Required*
CAZ 1								
	list of CAZ 1 appliances:							
CAZ 2*								
	list of CAZ 2 appliances:							

Gas Leak Testing:		Leakage Notes:	

	Kitchen	Other*	Action Required
Ambient CO (ppm)			

	Fuel*	CO (ppm)	Vent Out?	Action Required
Oven				
Range				
Other Appliance				

	Fuel*	Gas Properly Vented	Action Required
Dryer Vent			

NOTES:	

***As needed, list additional systems/zones/actions in the notes section; identify other system/fuel types in the notes section**

Figure A3: Blower Door Tests – Pre-Retrofit

Blower Door Test-In	
PRE-RETROFIT	
Date of Blower Door Test-In:	
BPI Building Analyst Performing Test-In:	
Phone Number of BPI Professional:	
AIR INFILTRATION RESULTS	
House Infiltration (at 50Pa):	
For house infiltration testing, with method did you use?	
Below please paste a photo of the manometer results of this test:	

Figure A4: Blower Door Tests – Post-Retrofit

Blower Door Test-Out	
POST-RETROFIT	
Date of Blower Door Test-Out:	
BPI Building Analyst Performing Test-Out:	
Phone Number of BPI Professional:	

AIR INFILTRATION RESULTS	
House Infiltration (at 50Pa):	
For house infiltration testing, with method did you use?	

Below please paste a photo of the manometer results of this test:

Figure A5: Duct Blaster Tests – Pre-Retrofit

Duct Blaster Test-In	
PRE-RETROFIT	
Date of Duct Blaster Test-In:	
BPI Building Analyst Performing Test-In:	
Phone Number of BPI Professional:	
DUCT LEAKAGE RESULTS	
How many HVAC duct systems were tested? For each one, submit this form separately.	
Calculated air flow from HVAC fan unit (CFM):	
For the duct pressurization test, how did you determine the full air flow from the fan unit? Write the equation you used and the numbers you inputted into the equation.	
Duct pressurization results (at 25Pa):	
Total duct leakage at start of job (supply + return), percentage of full flow (i.e. row 13 divided by row 11):	
Below please paste a photo of the manometer results of this test with the setting at 25Pa. If you are running a blower door test simultaneously, so you are pressurizing the whole house, please submit a photo of that manometer's reading as well to show that the ducts were pressurized to 25Pa.	

Figure A6: Duct Blaster Tests – Post-Retrofit

Duct Blaster Test-Out

POST-RETROFIT

Date of Duct Blaster Test-Out:	
BPI Building Analyst Performing Test-Out:	
Phone Number of BPI Professional:	

DUCT LEAKAGE RESULTS	
How many HVAC duct systems were tested? For each one, submit this form separately.	
Calculated air flow from HVAC fan unit (CFM):	
For the duct pressurization test, how did you determine the full air flow from the fan unit? Write the equation you used and the numbers you inputted into the equation.	
Duct pressurization results (at 25Pa):	
Total duct leakage at end of job (supply + return), percentage of full flow (i.e. row 13 divided by row 11):	

Below please paste a photo of the manometer results of this test with the setting at 25Pa. If you are running a blower door test simultaneously, so you are pressurizing the whole house, please submit a photo of that manometer's reading as well to show that the ducts were pressurized to 25Pa.

Attachment B: Review of Test-In and Test-Out Documents

The review of the test-in and test-out documents will be done in the following order:

- Based on the measures selected, the quality assurance professional will ensure that the correct tabs have been completed according to the chart on Page 1 of the template document.
- Review Combustion Safety / Combustion Appliance Zone Testing Pre-Retrofit and Post-Retrofit.
    1. Ensure that all of the notes under "Action Required" are the appropriate responses to the results listed in the previous columns according to BPI Standards:

Combustion Safety Test Action Levels

CO Test Result*	And/ Or	Spillage and Draft Test Results	Retrofit Action
0 – 25 ppm	*And*	**Passes**	Proceed with work
26 – 100 ppm	*And*	**Passes**	Recommend that the CO problem be fixed
26 – 100 ppm	*And*	**Fails at worst case only**	Recommend a service call for the appliance and/or repairs to the home to correct the problem
100 - 400 ppm	*Or*	**Fails under natural conditions**	Stop Work: Work may not proceed until the system is serviced and the problem is corrected
> 400 ppm	*And*	**Passes**	Stop Work: Work may not proceed until the system is serviced and the problem is corrected
> 400 ppm	*And*	**Fails under any condition**	Emergency: Shut off fuel to the appliance and have the homeowner to call for service immediately

**CO measurements for undiluted flue gases at steady state*

- Review Blower Door Test-In (if applicable)
    1. Ensure that infiltration is at CFM50 ≥ 1900
    2. Ensure that result and CFM50 setting matches photo of manometer
- Review Blower Door Test-Out (if applicable)

1. Ensure that infiltration at CFM50 ≤ 1100
2. Ensure that result and CFM50 setting matches photo of manometer

- Review Duct Blaster Test-In
  1. Ensure that percent leakage ≥ 28%
  2. Ensure that result and CFM25 settings match photo of manometer

- Review Duct Blaster Test-Out
  1. Ensure that percent leakage ≤ 15%
  2. Ensure calculations have been done correctly
  3. Ensure that CFM and CFM25 numbers coincide
  4. Ensure that result and CFM25 settings match photo of manometer

If a Project Completion Form is found to be incomplete or missing supporting documentation, an email and phone call will be made to both the participant and the Participating Contractor three times.

In-field Inspection Protocols

The Flex Path Pilot in-field inspections will be conducted by a quality control professional that holds a Building Analyst certification from the Building Performance Institute as a minimum. The quality control professional will not have existing business ties with any of the Participating Contractor's conducting retrofits in the Flex Path pilot. If such as relationship existed in the past, a minimum of a twelve month period is required between terminating the business relationship and performing any quality control procedures in the Flex Path Pilot program.

Attachment C: In-Field Quality Control Selection Protocol

The program administrator will ensure in-field inspections are performed at a sampling rate minimum of 5 percent (1 in every 20) for each Participating Contractor that has completed jobs under the SCE/SCG Energy Upgrade California Program. Randomly-chosen in-field inspections will target the incentive recipient and contractor to be notified after the Project Completion Form has been submitted. Notification will be sent via email and phone.

The national Home Performance with ENERGY STAR (HPwES) Program guidelines for a phased approach to sampling rates for in-field inspections will be applied to Participating Contractors that have not yet submitted jobs through the SCE/SCG Energy Upgrade California Program.

Phase 1: In-field inspection with a passing score on 3 of the first 5 jobs completed by a new Participating Contractor.

Phase 2: After the first 5 jobs are completed, 20 percent of the next 20 jobs would receive in-field inspections.

Phase 3: After completion of the Participating Contractor's first 25 jobs, the program administrator will lower sampling rate to 5 percent or greater of completed jobs.

It is important to note that the in-field inspections are at Participating Contractor level and not 5 percent of total program jobs. All in-field job inspections will occur after improvements have been installed. An in-field inspection may be scheduled during the contractor's test-out and prior to job completion (see Air Sealing/Duct Sealing below).

If a Participating Contractor is part of Southern California Edison's Quality Installation (QI) program, a site inspection may be waived if the documentation submitted to Edison's Quality Control division is submitted to the Flex Path Quality Control Professional as well.

Random Sample

Jobs will be selected through a random sample in order to maintain a representative sample of each Participating Contractor's work. However, a sample may not be purely random as some customers may not be willing to schedule an inspection or may schedule an inspection based on concerns with the work undertaken.

Air Sealing/Duct Sealing

Participants that plan to undertake air sealing and duct sealing in the Flex Path Pilot will be flagged in the Application Form desktop review for 5 percent minimum in-field inspection during the contractor's test-out procedure, to be conducted at a rate commensurate with the sampling rate of the contractor's in-field inspections. By signaling that these measures are being installed, the quality control professional can arrange to witness the performance of the duct and/or blower door test-outs. In this case, the Participating Contractor may be asked to submit all supporting documentation prior to this meeting (with the exception of test out results and an itemized paid invoice). In this case, the QA professional will notify the incentive recipient and participating contractor within ten business days of receiving the application. This notification ensures the QA professional will be kept abreast of scheduled test-out dates and times.

The QC Professional will verify the system tonnage by inspecting the condenser nameplate. This number, multiplied by 400CFM, will equal the total nominal system airflow. This will be the denominator when dividing the CFM result of the Duct Blaster test to calculate the leakage percentage.

Pre-Installation Inspection

The program administrator reserves the right to perform a pre-installation inspection on all jobs in the Flex Path Pilot. Flex Path applications submitted for a property with multiple HVAC systems will trigger a mandatory post-installation inspection.

Scheduling Inspections

The Flex Path administrator will identify the random sampling of projects to be inspected weekly and forward them to the Quality Control Professional. Once received, this person will use a Route Planner function to identify the most efficient order in which the sites should be inspected on a given day.

Calls are then made to each homeowner. The call script is as follows:

"Hello, my name is _____, and I'm calling from LA County's Flex Path program. I wanted to let you know that we received all the supporting documentation we need to close out the project and issue your incentive. The last step is to schedule an on-site inspection, and I was wondering if you were available on _____."

The Route Planner will be used to calculate what amount of time to leave between inspections for travel. The amount of time it takes in current traffic should influence this determination. If any measure may be located in the attic, the homeowner will be asked if they can have a ladder readily available. Such measures include:

- Attic insulation & sealing
- Attic radiant barrier
- Furnace replacement
- A/C replacement (coil)

After the day and time have been agreed upon, the following information is included in the calendar event:

- SUBJECT: On-site Inspection: Last Name, First Name: Project Number
- LOCATION: Address
- NOTES: Phone number, email address, measures in application

Preparing for Inspections

Before going out in the field, each inspection will be prepped with the information necessary to verify what was installed matches the supporting documentation that was submitted. This includes, but is not limited to:

- Manufacturer and model numbers (A/C, furnace, DHW tank/tankless, heat pump, thermostat)
- Photos of installation (light fixtures, water fixtures, whole house fan, windows, cool roof)
- R value of insulation (attic insulation & sealing, crawlspace insulation)

This information can be included in the notes section of the calendar event and pulled up on a smart phone or other computer in the field to match all information with what is present in the home.

What to Bring to the Field

The Quality Control Professional will be responsible for bringing with him/her all the necessary information to check that the submitted supporting documentation matches that which is found in the house. This includes:

- Furnace specifications
- A/C specifications
- Heat pump specifications
- Thermostat specifications
- Hot water heater specifications
- Tankless hot water specifications
- Light fixtures specifications

On-site Inspection Procedures

When arriving at the site, the Quality Control Professional will ask to inspect anything that may be outside first. This may include the A/C condenser, cool roof, windows, crawlspace insulation, DHW tank/tankless, lighting fixtures, and pipe wrap.

When entering the home, the Quality Control Professional will ask the homeowner if he/she prefers that booties be worn around work boots. All measures that are inside the home will then be inspected. The Flex Path representative should be courteous and polite. This person will not touch anything in the home that is

not necessary for inspection purposes. Ask the homeowner to turn off the A/C or heating system if inspecting any part of this core system.

General guidelines for what to complete during the visit include:

- A visual survey
- Review the measures selected on the application and determine whether each is new to the home.
- Note obvious missed opportunities for improving home performance that could have driven the scope to an Advanced Path project.
- Evaluate each measure against Flex Path's Qualifying Measures post-retrofit conditions.
- Witness the test-out performed by the contractor (in the case of duct insulation & sealing or air sealing)

For each measure below, the following information is verified in the field:

- Crawlspace insulation: Verify that it has been installed by looking in at least one entry point. If there are multiple, enter or look through them all. It is not necessary to get completely under if a vision inspection can be made by only inserting one's head. Look at the quality of the installation.
- Wall insulation: If there are patches or paint marks in outside walls, look to see that they are spaced about 3' from each other and that there are at least two points vertically at which the insulation was drilled and filled. Ensure that the wall insulation is in every exterior wall around the conditioned space.
- Air sealing: The QC professional will be at the Blower Door test-out to verify that the manometer reading matches Flex Path requirements. If not present for this, check that weather stripping and caulking were installed at any easy-to-access points (doors, windows, walls, etc.)

- Attic insulation & sealing: Verify that the thickness installed matches the thickness that the specification sheet indicates is necessary to reach the required R-value. Look at the quality of the installation.
- Attic radiant barrier: Ensure that the radiant barrier is continuous throughout the entire attic roof. Look at the quality of the installation.
- Furnace: Verify that model number match the specification sheets or AHRI certificate submitted as supporting documentation. This may require removing the cover of the furnace.
- A/C: Verify that condenser model number and coil model number match the specification sheets or AHRI certificate submitted as supporting documentation. If the condenser is on the roof, do not inspect it.
- Heat pump: Verify that model number match the specification sheets or AHRI certificate submitted as supporting documentation
- Whole house fan: Look to see that one was installed and ask if it vented out of the roof or just into the attic.
- Thermostat: Verify that it is programmable and that it is the same manufacturer and model number as the specification sheet submitted as supporting documentation
- Duct work: Ideally, the professional is present during test-out. If not, check to make sure that insulation is R-8. Look to see how the ductwork was laid out to see if it can be improved.
- Windows: From outside the house (or inside when necessary), go around the house to verify that all the windows are new and double-pane.
- Hot water heater (tank or tankless): Verify that model number match the specification sheet submitted as supporting documentation.

- Pipe wrap: Look at the DHW heater to see that pipes have been wrapped. Ensure that the insulation is not within 5" on the unit or a wall entry point. If you can also see exposed hot water piping in the crawlspace, basement, or attic, look to see that it is wrapped there are well.
- Water fixtures: Verify that the thermostatic shut off valve (i.e. the Evolve ShowerStart Roadrunner) was installed on all showers. Look underneath all faucets in all bathrooms and kitchen to see that aerators were installed.
- Lighting fixtures: Verify that the photos submitted as supporting documentation match those that are encountered in the home. The QC professional must ask the homeowner which of the light fixtures have been retrofitted.
- Cool roof: Look from the ground to see that shingles match the specification sheet submitted as supporting documentation. Verify that the entire roof has been re-shingled. Do not go up to the roof.

After all measures have been inspected, the QC professional will ask the homeowner where a good place to sit to fill out his/her paperwork would be. Then he/she will complete the in-field inspection form. After that, the customer discussion will begin. For details, see the section below by the same name.

Utility Service Account Number Conflict

During the review of the Application there will be a check to see whether the applicant has already participated in the EUCLA Basic or Advanced Package by a cross reference of the Utility Service Account Number. If the participant has previously had retrofits installed under the Energy Upgrade program, they will be flagged for an in-field inspection to ensure that the qualifying measures installed in the Flex Path Pilot were not already installed in the Basic or Advanced Package.

Contractor Performance

In-field inspection rates may be increased for a Participating Contractor whose score at a previous inspection is below 3 (See In-field Inspection Score Template). A contractor who receives a score below 3 will receive a mandatory in-field inspection for his/her next project.

Customer Discussion

The in-field inspection will begin with the quality control professional (acting on behalf of the program administrator) introducing themselves, their organizational affiliation, and the purpose of the visit; to verify that the work conducted by the Participating Contractor meets program guidelines.

The quality control professional must maintain a positive and objective attitude during all conversation with the participant, address any specific questions that they may have about the inspection and determine any concerns about the installed work. (See Figure 1 for possible talking points).

After the measures have been verified, the homeowner will be asked if he/she does not mind answering a few questions. The following questions will include:

Figure C1: Optional customer discussion items

- Confirm that the customer received correct information regarding what to expect from the program.
- Verify that the applicable test-in was performed and that the customer received a copy of all results from any test.
- Verify that any applicable test-outs were completed prior to submittal of the Project Completion Form (except in the case of air sealing/duct sealing in which the QA professional will be present during the test-out procedures).
- Confirm that the pre-retrofit requirements as described in the Qualifying Measures document were in place before the installation.
- Enquire if the customer has and is willing to share utility bill data, whether the utility bills were requested by the contractor, and whether or not the customer provided them to the contractor upon request.
- Confer with the customer regarding his/her satisfaction with the contractor's assessment, installation and overall experience with EUCLA.
- If customer displays positive attitude with regard to overall satisfaction, recommend that he/she share the experience with friends and family to encourage their participation in Energy Upgrade California.
- Encourage the customer to enroll in other Energy Upgrade California Programs.
- Ask the customer how he/she heard about the program.

In-field Inspection Scoring Protocol

Figure C2: The protocol described below will be used during in-field inspections

Score	Performance	Overall Comment
FAIL		
0	• Combustion appliance testing results do not meet BPI Technical Standards or relevant program standards. • Measures in contracted scope of work not installed. • Minimum standards for building ventilation are not being met. • Unsafe conditions resulting from installed work and posing immediate health/safety threat to occupants are found.	Contractor's performance does not meet technical standards, program requirements and/or the home needs immediate corrective action.
1	• Health and safety issues are present, but do not pose an immediate threat to the occupants. Measures were installed but not correctly to meet program requirements and standards. • Measures were not installed correctly.	Contractor's performance does not meet technical standards or program requirements and the home requires non-immediate corrective action.
2	• Below standards/incorrect installation of required measures.	Several technical deficiencies were observed that require corrective action.
PASS		

Score	Performance	Overall Comment
3	• Installed measures did not meet all technical installation standards, but no serious deficiencies were found. • Some incorrect data gathered and provided to customer without any significant impacts on work completed or effectiveness of job.	Contractor's performance meets all technical standards and program requirements but some areas of technical performance need improvement and may require corrective action.
4	• All technical standards of installation have been met (e.g. BPI Technical Standards) • Work is comprehensive in nature. • Recommended and installed measures were consistent with Application Form. • Test-out reporting was accurate.	Contractor's performance meets all technical standards and program requirements.

- **Contractor Performance Record**

Customer Feedback

If positive or negative feedback is received from the customer about the Participating Contractor, this will be stored in the contractor's performance history file. An in-field inspection will be promoted if the customer feedback warrants additional investigation to ascertain that the contractor has abided by all program policies and procedures.

Contractor Feedback and Corrective Action

If corrective action is indicated on the quality control professional's in-field inspection report, this will trigger the program administrator to contact the Participating Contractor. The contractor will be contacted within ten business days from when the in-field inspection report was filed via phone and email.

The contractor must correct the problem that has been identified and submit documentation regarding the corrections made to the program administrator immediately after the issue has been resolved.

If the quality control professional notes small errors at an in-field inspection, this will be recorded into the contractor's performance file. Feedback will be provided to the contractor in a constructive manner that includes instructions on how to prevent making such mistakes on future projects. If the same errors are found multiple times for the same contractor, a higher sampling rate for in-field inspections may be established.

If significant errors are found (i.e. the contractor receives a score of 0 or 1), the quality control professional will perform a phone consultation with the contractor to discuss pertinent issues. After this, the quality control professional will send the contractor a document that outlines corrective action scope of work that is required within 30 days, or an appropriate amount of time consistent with the construction work included. Documentation, both in written and photographic form (as applicable), must be submitted by the contractor as a record that the remediated action has been completed.

If an in-field inspection determines a severe situation is present within the house (i.e. one threatening the health and safety of occupants), the customer will be notified, and the quality control professional will decide an appropriate course of action. This may consist of informing the Utility Service Account Holder, contacting the fire department, or turning off equipment. The quality control professional will contact program administration to inform them of the situation. The quality control professional will immediately address the situation and provide the contractor instructions for necessary corrective actions to take as soon as possible. Documentation, both in written and photographic form (as applicable), must be submitted by the contractor as a record that the remediated action has been completed.

If acceptable for health and safety standards, the quality control professional will rely solely on the contractor to inform the customer about any deficiencies in the installation and any necessary corrective action.

Conflict Resolution Procedure

Situations may arise in which a contractor disputes a low in-field inspection score or disagrees with the QA professional's assessment of the Completion form with backup documentation. Some potential conflict resolution scenarios include:

- The measures installed were not the same as those selected in the Application Form. In this case a new application may be submitted if the point values of the installed measures meet the minimum required.
- The property is not located in Los Angeles County.
- The measures were not properly installed.
- The photographs or cut sheets are missing pertinent information.

In order to obtain resolution, the contractor can call the EUCLA call center (877-785-2237) and ask to receive the Program Administrator's contact information. The Administrator will then review with the Participating Contractor's QA in-field report. The following process will be used by the Program Administrator to resolve any contractor disputes:

- Review Application Form and Project Completion Form for the project.
- Review the content of In-field Quality Assurance Report.
- Discuss the results of the In-field Quality Assurance Report with the contractor.
- Review all relevant information and make a decision whether or not to revise the In-field Quality Assurance Report score. If appeal is denied, go to the next step. If the appeal is approved, skip to step 7.

- Recommend that contractor seek additional training and/or mentoring.
- Increase the sampling rate the of the contractor's next five projects.
- Report all Conflict Resolution proceedings and outcomes to the Los Angeles County.

Inputting Scores

Once the QC professional returns to the office, he/she must notify the Flex Path administrator of the scores for all inspections. The in-field reports must be scanned and saved into the supporting documentation files for the inspections. If a site has more than one project number (i.e. Flex Path application), the report should be saved to each supporting documentation folder. Additionally, the inspection scores must be uploaded to each project via EnergyOrbit.

- **Program Data Reporting Requirements**

The following will be compiled and maintained for all applications received through the Flex Path Pilot program:

- Database of Application Forms
- W-9 Forms (if applicable)
- Project Completion Form
- Copy of Itemized Paid Invoice
- Supporting Documentation (e.g.: specification sheets, before and after photos, test-in and test-out results)
- In-field inspection results (if performed)
- Corrective action documentation (if in-field inspection performed and corrective action prescribed)

Figure C3: In-field Quality Assurance Report

	Verification Date
Customer Address	
Customer Phone	Customer Email
Customer Name	Verifier Name

Instructions to the Verifier

Answer the questions below using observation and the information provided by the program administrator. In completing the forms include comments on the quality of the work performed. Feedback helps contractors improve the quality of their work, so be as specific as possible.

Meeting Program Requirements and Technical Standards

- Does the work scope in the Application Form match the work actually done in the home? If no, include explanation.

- Were any BPI standards or installation standards *not* satisfied? If yes, explain.

- Did any of the selected Qualifying Measures not meet the required post-retrofit conditions? If yes, explain.

- Do any of the products installed *not* match the product details on the specification sheets? If yes, provide details.

- If applicable, do the nameplates in the photos match the nameplates present on the installed equipment? If no, explain.

- Describe any items overlooked or done poorly.

- Describe items done particularly well.

In-Field Inspection Procedures

- Combustion safety test (CST)
  1. Be present when the contractor is performing the CST.
  2. Does CST meet BPI technical standards? **YES** or **NO** or **N/A**
  3. Do CST results show everything passes? **YES** or **NO** or **N/A**

- Blower door test in and test out
  1. Be present when the contractor is performing the blower door test out.
  2. Does blower door test out meet BPI technical standards? **YES** or **NO** or **N/A**
  3. Does the blower door test out results meet program requirements? **YES** or **NO** or **N/A**

- Duct test in and test out
  1. Be present when the contractor is performing the test out.

2. Does duct test out meet BPI technical standards? **YES** or **NO** or **N/A**

3. Does the duct test out results meet program requirements? **YES** or **NO** or **N/A**

Post Retrofit QA Verification

Fail – Score 0

Contractor's performance does not meet technical standards, program requirements and/or the home needs immediate corrective action.

- Combustion appliance testing results do not meet BPI Technical Standards or relevant program standards.
- Measures in contracted scope of work not installed.
- Minimum standards for building ventilation are not being met.
- Unsafe conditions resulting from installed work and posing immediate health/safety threat to occupants are found.

Fail – Score 1

Contractor's performance does not meet technical standards or program requirements and the home requires non-immediate corrective action.

- Health and safety issues are present, but do not pose an immediate threat to the occupants. Measures were installed but not correctly to meet program requirements and standards.
- Measures were not installed correctly.

Fail – Score 2

Several technical deficiencies were observed that require corrective action.

- Below standards/incorrect installation of required measures.

Pass – Score 3

Contractor's performance meets all technical standards and program requirements but some areas of technical performance need improvement and may require corrective action.

- Installed measures did not meet all technical installation standards, but no serious deficiencies

were found.

- Some incorrect data gathered and provided to customer without any significant impacts on work completed or effectiveness of job.

Pass – Score 4

Contractor's performance meets all technical standards and program requirements.

- All technical standards of installation have been met (e.g. BPI Technical Standards)
- Work is comprehensive in nature.
- Recommended and installed measures were consistent with Application Form.
- Test-out reporting was accurate.

Overall Inspection Score for this Project _____

Verifier Signature _____ **Date** _____

Attachment D: Draft Walk-through Audit Form

energy upgrade CALIFORNIA IN LOS ANGELES COUNTY

Improve your home. Get rebates. Save money.

FLEX PATH

Walk-Through Whole House Assessment

Account Holder/Property Owner Information					
First Name:					
Last Name:					
Street Address:		City:		Zip Code:	
Full Mailing Address (if different):		City:		Zip Code:	
Email address:					
Phone number:					

Contractor Information					
EUC ID#					
Company:					
Street Address:		City:		Zip Code:	
First Name:					
Last Name:					
Email address:					
Phone number:					

Visual Inspection from the Street	
Type of landscaping (circle one):	DROUGHT-RESISTANT & NATIVE SPECIES / SPRINKLER-DEPENDENT
Moisture damage to side of home (circle)?	YES / NO
Any visible safety hazards? List here:	

Attic Insulation	
R-value:	
Radiant barrier (circle)?	YES / NO

Windows	
Majority are (circle one):	
SINGLE PANE / DOUBLE PANE	

Wall Insulation	
R-value*:	
**If infrared scan is not used, this value will most likely be based on the year the home was buil.*	

Crawlspace Insulation	
R-value:	
Vapor barrier (circle)?	YES / NO
Check here if slab on grade:	

Whole House Fan	
Is one installed in the home (circle)?	

Domestic Hot Water Heater / Plumbing			
Type (circle one):	TANK / TANKLESS		
Model Number:			
Nameplate Efficiency:			
If tank, size (gal):			
If tank, fuel source (circle one):		ELECTRIC / GAS	
Number of Bathroom Faucets:		Pipes wrapped?	YES / NO
Number of Showerheads:			
Number of Kitchen Faucets:			
Any thermostatic shut-off valves installed (circle)?		YES / NO	

Page 1

Lighting	
Number of Incandsecent Bulbs in Home:	
Number of Light Fixtures in Home:	

Cool Roof
Was a cool roof previously installed (circle)?
YES / NO

Heating, Ventilation, and Cooling Equipment			
Does the house have central A/C (circle)?	YES / NO	Number of Ceiling Fans:	
Number of systems:		Number of Electric Heaters:	
System #1			
Does the A/C system function properly (circle)?		NEVER / SOMETIMES / ALWAYS	
Does the furnace function properly (circle)?		NEVER / SOMETIMES / ALWAYS	
Condenser Model Number:			
Coil Model Number:			
SEER Rating:			
EER Rating:			
Furnace Type:			
Furnace Model Number:			
AFUE Rating:			
Type of Ducting:			
R-value of Ducting:			
Condition of Ducting (circle):		POOR / FAIR / GOOD	
System #2			
Does the A/C system function properly (circle)?		NEVER / SOMETIMES / ALWAYS	
Does the furnace function properly (circle)?		NEVER / SOMETIMES / ALWAYS	
Condenser Model Number:			
Coil Model Number:			
SEER Rating:			
EER Rating:			
Furnace Type:			
Furnace Model Number:			
AFUE Rating:			
Type of Ducting:			
R-value of Ducting:			
Condition of Ducting (circle):		POOR / FAIR / GOOD	
Notes on number and location or return/intake registers and homeowner's comfort in the house (Any drafts? Usually cold/hot rooms?):			
Is asbestos present in the house (circle)?	YES / NO		

Page 2

A4: Continue EUCLA contractor outreach and training programs. - $1,014,250

Heating, Ventilation and Air Conditioning (HVAC) Contractor Incentive Pilot - $539,250

Pilot Overview

Currently, EUCLA contractor participation is limited to those contractors that have completed EUC contractor training and received Building Performance Institute (BPI) certification (as required by the California Public Utilities Commission). The County has implemented an HVAC Contractor Marketing and Training Incentive pilot program to motivate non-EUCLA certified contractors (through incentives, training, and other resources) to convert typical HVAC equipment replacement, service or maintenance events into EUCLA projects. HVAC contractors are provided with the tools and training to assess and implement more comprehensive measures under EUCLA as part of routine equipment work. The HVAC Contractor Pilot provide free manual J,D, S equipment and duct sizing software to HVAC contractors ($1,000 value), EUCLA certification tuition reimbursement for up to two company technicians, and a $500 incentive for each EUCLA upgrade completed. Under the 2010-12 program, up to 100 homes were targeted for retrofits, 20 Wrightsoft software licenses were made available at no cost for distribution, and 30 EUCLA participating contractors were recruited to accomplish advanced HVAC design through LA County. Under the proposed 2013-14 program, LA County strives to continue the success of the existing program and also align this HVAC Pilot program with the Final Decision direction on HVAC Incentives Programs in two focus areas:

1) Support the energy efficiency loading order that provides building shell improvements followed by "right-sized" central Heating, Ventilation, and Air-Conditioning (HVAC). The HVAC Program shall focus on increasing the participation of new and existing HVAC contractors in the Energy Upgrade California program;
2) For EUC projects the HVAC Program shall encourage "above-code" HVAC design, with energy savings attributed to the delta between the EUC program minimum modeling requirements (EnergyPro) for duct and equipment sizing and the equipment and ductwork sized by using more advanced calculations of the manual J, D, and S. Reductions in both ductwork and equipment can

contribute to overall energy savings in a single family residence that may not be realized as recognized by the EnergyPro software limitations.

Under the two focus areas listed above, the HVAC Program is designed to address three initiatives.

1) Permitting: To create scaleable results, the HVAC Program shall collaborate with future Energy Upgrade incentive program designs to reinforce permitting requirements into job submittal documents. This shall be done by implementing a Quality Control check on permits for work performed in Energy Upgrade projects.
2) Workforce Development: While supporting a target market of HVAC Contractors, the program will make opportunities available for general contractors to acquire the knowledge, skills and abilities of the design and installation of "right-sized" HVAC retrofits. In a complementary fashion, the program will provide opportunities for HVAC Contractors to become home performance contractors.
3) Market Transformation: A capable local workforce will be developed by increasing the participation of HVAC Contractors in Energy Upgrade Programs, and by ensuring resources are made available to existing Participating Contractors to properly size HVAC systems. Additionally, the value and benefits of energy efficiency through a loading order shall be communicated in Energy Upgrade outreach to Realtors, Appraisers, Raters and equipment Distributors, creating awareness across a broader level of stakeholders.

Planned Approach

1) Ensure existing and new contractors are equipped to deliver quality whole house retrofits:
    a. Ensure at program cycle launch that existing EUCLA Participating Contractors with HVAC related licenses have opportunities to receive advanced Manual J, D and S software training.
    b. Identify large volume HVAC Contractors and create funneled opportunities for them to become new Energy Upgrade Participating Contractors. Marketing and Outreach Collateral specific to HVAC Contractors has been developed under the previous program cycle which can be leveraged for quick dissemination and recruitment.
2) Provide adequate information to contractors to influence the early adoption of HVAC technologies and value added whole house upgrades:

a. Encourage contractors and their staff to educate homeowners about HVAC operations and maintenance to ensure long-lived energy savings. The Sales and Marketing webinars proved highly effective under the previous program cycle. Providing home performance sales training to ancillary staff at traditional HVAC Contractor offices will further increase their participation in Energy Upgrade California programs.
b. Collaborate with IOU programs for funneled opportunities for Homeowner enrollment in Summer Discount Plan, 10 for 10 Program, and HVAC related Demand Response opportunities.

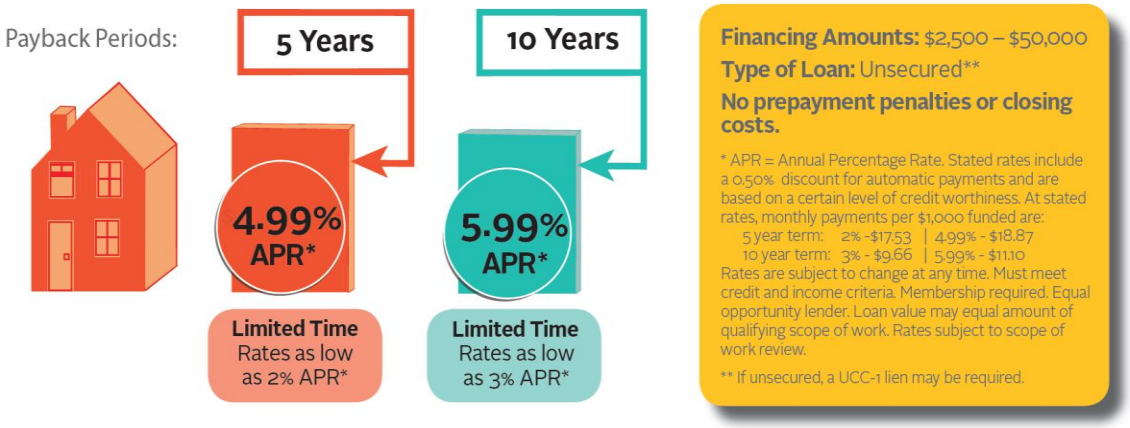
3) Empower local governments and non-utility actors to embed HVAC best practices in their communities.
   a. Support the integration of HVAC resources into future iterations of Energy Upgrade California programs.
   b. Work with Local Governments to identify strategies for increasing code compliance for HVAC retrofits in their communities.
4) Cool Comfort Financing- SoCalREN will leverage multiple funding sources to implement an HVAC financing program designed to facilitate more efficient equipment upgrades, quality installations, and permitting compliance. The program builds on the success of the Matadors' Single Family Loan Loss Reserve (LLR) financing program implemented as part of Energy Upgrade California (EUC) in Los Angeles County to offer a loan product for emergency and non-emergency HVAC equipment replacement undertaken by Southern California homeowners. The program requires equipment efficiencies that are above current code as shown below.

Qualifying HVAC Upgrades

HVAC Installation	Minimum Energy Efficiency Requirement
Central Air Conditioning Unit	15 SEER and 12 EER
Central Forced Air Furnace	95% AFUE
Heat Pump	8 HSPF, 15 SEER and 12 EER
Duct Sealing and Insulation or Duct Replacement	Compliance with Local Code

To be eligible, property owners must receive utility service from at least one of the following utilities: SCE, SCG, or SDG&E. Low APR financing (shown in Financing Terms) is available for HVAC projects in single-family homes, attached or detached.

Financing Terms



The Cool Comfort Financing program will be fully integrated with SCE's Quality Installation program, SCG's ENERGY STAR® & Tier I Natural Gas Furnace incentive program, LADWP's Energy Efficient Central Air Conditioner or Heat Pump incentive program, and other municipal utility programs in the southern California region (depending on funding source restrictions). Integrating utility incentives with low cost financing will create a comprehensive package of services for contractors to deliver to their customers and will ensure that customers receive a more comprehensive, quality HVAC upgrade that meets (or exceeds) local code requirements.

Evaluation

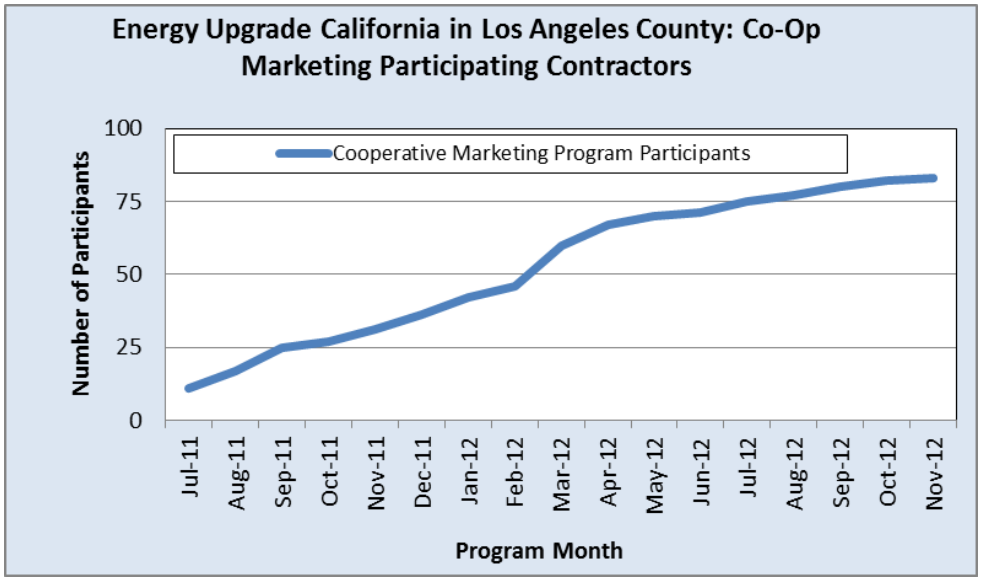
- Number of EUC PCs with HVAC related licenses
- Number of HVAC jobs and value-added upgrades performed towards whole house retrofits
- Number of trainings offered
- Number of case studies, tours and presentations
- Number of loans and permits closed

Contractor Co-op Marketing - $ 475,000

The County has made grant funds available to EUCLA Contractors to offset the cost of their own customized marketing and outreach materials. This program was created in response to input from contractors that although the overarching EUCLA media campaign was successful in raising awareness, they needed to supplement it with advertising for their individual companies in order to drive demand. The Co-op Marketing program provides 50% matching funds (up to $40,000 per contractor) as reimbursement to contractors who submit invoices for marketing materials and advertising. Eligible materials must meet program guidelines and must be preapproved by program staff. They must include the EUCLA logo and be used within the County of Los Angeles. This program, combined with other marketing tools and training provided to Participating Contractors, allows them to differentiate their company and increase the number of upgrades performed.

From the program inception in July of 2011 to November of 2012, nearly $220,000 in matching funds has been distributed to contractors. That means that Co-Op Marketing has stimulated nearly $440,000 in contractor marketing endeavors toward promoting EUCLA. Nearly half of participating contractors in Los Angeles County are actively using Co-Op Marketing to promote their EUC business as shown below.

Figure 7 (Subprogram A): EUCLA Contractor Co-op Marketing Participation



The uniquely high level of participation in Co-Op Marketing is stimulated by pro-active marketing and support to contractors. The keys to our success are:

- PERSONAL COMMUNICATION: Fewer mass emails, more phone calls and personal emails.
- LEVERAGE OPPORTUNITIES: Take every opportunity (community events, training sessions, phone inquiries, etc.) to remind contractors of the program and discuss how it can benefit their business.
- SAVE TIME: Offer pre-designed materials at low cost or no cost.
- SIMPLIFY: Offer concise Program Guidelines that are brief and easy to understand. Forms should be simple and short.
- BE AVAILABLE: Offer a single point of contact or a single email to which Co-Op Marketing communication should be sent.
- SET EXPECTATIONS: Clearly outline design requirements in the Guidelines, and adhere to them.
- BE FLEXIBLE: Be available for rush approvals or design exceptions on an as-needed basis.
- FOLLOW UP: Call contractors quarterly to follow up on pending projects, or to discuss ideas they may have.
- GET INPUT: Contractors know best what contractors need. Be open to suggestions or ideas for uses of Co-Op Marketing Funds.
- GIVE EXAMPLES: Offer specific examples of how funds can be used in order to pique a contractor's interest, or give them ideas they may not have previously considered.

The categories of promotional items that contractors typically design and produce include:

- Print On Demand (free customized brochures, flyers, etc.)
- Auto Wraps
- Signage
- Small Print Materials
- Canvassing/Distribution
- Apparel
- Trade Show Fees/Expenses
- Print Media
- Electronic Media
- Other, Miscellaneous

A5: Expand EUCLA multifamily pilot incentive program - $9,543,801

Program Statement

The Existing Multifamily Energy Efficiency Initiative aims to transform the multifamily energy efficiency market in the following ways:

1) Help 180 multifamily property owners perform significant upgrades (e.g. beyond basic cosmetics or minor repairs) to projects totaling 8,000 housing units
2) Property owners will realize measurable economic benefits from energy and green upgrade projects
3) Tenants will prefer and seek out multifamily buildings with energy efficiency and green improvements and/or labels.
4) Lenders will encourage and/or require energy efficiency and green improvements with commensurate benefits

Raters and contractors will comprise a highly skilled workforce for the multifamily sector. The Multifamily Energy Efficiency program will be offered to all multifamily property owners in the combined service territories of SCE and SCG, including low income properties. While qualified multifamily buildings must contain a minimum of five units for participation, there is no limit to the total number of units or floors in a multifamily building. SoCalREN will work with the IOUs to ensure that owners of low income multifamily properties are aware of IOU program options available to them, and they will be required to opt-in to the SoCalREN multifamily program. SoCalREN will coordinate with the IOUs on all project applications to ensure there is no double-dipping with respect to incentives, or prior participation in an IOU program in the past five years.

Market Description

The existing multifamily housing sector holds great potential for energy savings in addition to other resultant economic and environmental benefits from a robust energy efficiency industry. Market study estimates[9] have shown over 1.0 million multifamily units in Southern California Edison's service territory located in over 145,000 multifamily buildings. This unique customer segment warrants specific, focused attention and effort in order to motivate property owners and managers to actively participate in whole building energy efficiency programs. In the multifamily sector, energy savings and social equity are intertwined challenges. Eighty-eight percent of multifamily building residents are renters, and many of these are low-income households. Compared to higher income homeowners, lower income renters spend a disproportionate amount of their income on energy, and yet they typically do not have the financial resources or ownership rights to make energy efficiency investments in their homes. Well-coordinated upgrade programs targeted at the multifamily and affordable housing sector can make a big difference in individual's lives while also helping achieve the state's ambitious energy and climate change goals.[10]

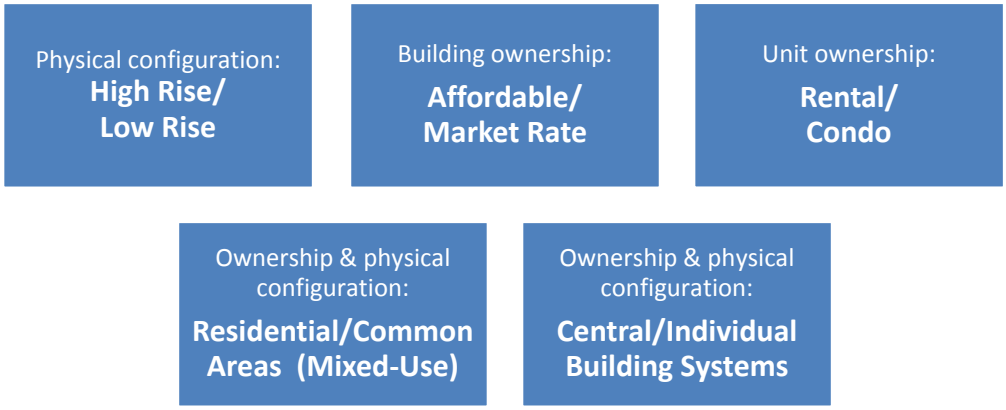
The multifamily sector encompasses a range of building sizes, system types and configurations of dwelling units and nonresidential areas. These configurations generally fall into the categories shown in Figure 9 below. When multifamily buildings undergo energy efficiency and green upgrades, these occupancy mixes and physical configurations affect how technical protocols, codes and standards (such as the residential vs. commercial versions of Title 24) are applied.

---

[9] The California Energy Commission's "2003 Residential Appliance Saturation Survey (RASS)" database

[10] California Home Energy Retrofit Coordinating Committee (2010), *Improving California's Multifamily Buildings: Opportunities and Recommendations for Green Retrofit & Rehab Programs*

Figure 9 (Subprogram A): Multi-family configurations



Program Rationale

In IOU service area, the multi-family market sector has a consumption base well over 2 billion annual kilowatt hours generated by over 680,000 multifamily service accounts[11] (in buildings of five or more units). Assuming the age of the multi-family housing stock in the IOU service territory mirrors the age of the overall housing stock, up to 70% of the multifamily buildings were built pre-1980[12], representing a large opportunity to improve efficiency within this segment of housing.

Despite the potential for energy savings, there are significant barriers to participation for property owners, including but not limited to:

- **Split Incentives.** Rental property owners have inadequate incentive to make green improvements because the improvements accrue to the tenants, while tenants have no incentive to make permanent improvements to the property because they have no equity stake and their tenure in the building is too short to realize a return on investment.

[11] (See footnote 1)

[12] 2005 American Community Survey, US Census

- **Lack of Information.** Lack of well-documented business case information and standardized analytical methodologies leaves property owners ill-equipped to evaluate the technical and economic potential for retrofitting their properties
- **Lack of access to affordable capital** limits retrofitting opportunities, particularly in the affordable housing sector.

Despite the challenges, various initiatives sponsored by a variety of industry stakeholders are underway to address the above stated barriers, including increased property owner/manager outreach and workforce development, and financing and incentive programs that help property owners complete comprehensive rehabilitations of their properties. In particular, the Los Angeles County Multifamily Pilot Program provided for $425,000 in property owner incentives and additional funds for Program Administrator outreach. This Pilot program was fully subscribed well before program expiration, with 14 projects representing 1,174 housing units. The momentum generated by this and similar initiatives in southern California creates a positive environment for further action which the Existing Multifamily Energy Efficiency Initiative aims to satisfy.

Support of the Strategic Plan

The Existing Multifamily Energy Efficiency Initiative, in support of the California Long Term Energy Efficiency Strategic Plan (Strategic Plan), pursues comprehensive energy efficiency measures and treats multifamily buildings as a system to seek deep energy reductions. One of the goals of the Strategic Plan is the transformation of the home improvement market to apply whole-house energy solutions to existing homes. The overall objective of the goal is to reach all existing homes and maximize their energy efficiency potential through delivery of a comprehensive package of cost effective measures. The Strategic Plan further states that a similar approach must be developed for multifamily housing.

Program Objectives and Expected Outcomes

The program objective is to help multifamily property owners perform whole-building energy upgrades to projects totaling 8,000 housing units.

Expected program outcomes:

- Deeper energy savings per building than otherwise possible; with a target of 10-20% or greater savings per building, benefitting both property owners and tenants;
- A broader suite of measures than in typical deemed programs, resulting in deeper energy savings;
- Improved property owners' and property managers' understanding of the benefits of a whole building approach;
- A better understanding of combustion safety as it relates to comprehensive (non-prescriptive) retrofits within the multifamily market;
- Refinement of a market transformation strategy for cultivating a self-sufficient building performance industry capable of serving the unique needs of the multifamily sector.

Innovation

The Existing Multifamily Energy Efficiency Initiative builds on the success of Los Angeles County's ARRA-funded multifamily pilot program to offer whole-building energy upgrades to multifamily property owners. Historically, multifamily energy efficiency programs have focused on single-measure rebates or offered direct installation of a limited number of weatherization measures. This initiative seeks to achieve deeper energy savings on a per-project basis than prior programs.

Energy Measures

The Existing Multifamily Energy Efficiency Initiative utilizes a customized savings approach to determining program eligibility and calculating incentives. Any permanent improvement that can be shown to produce energy savings using approved building simulation software is an eligible energy measure.

Approved measures include but are not necessarily limited to:

- INSULATION
    - Attic insulation (with attic plane sealing)
    - Wall insulation

    - Floor insulation
- HVAC
    - Duct sealing
    - Duct insulation
    - Package terminal air conditioners
    - Package terminal heat pumps
    - Brushless fan motor for central forced air
    - Variable speed motor
    - Evaporative coolers repair & replacement
    - Central natural gas furnace
    - Bathroom fan replacement
    - Thermostatic radiator valves (TRV)
    - HVAC pipe insulation
- WATER HEATING SYSTEMS
    - Electric storage water heaters
    - Central system natural gas water heaters
    - Natural gas storage water heater
    - Demand control for centralized water heater recirculation pump
- WINDOWS
    - High performance dual-pane windows
    - Window film (as allowed by code)
- LIGHTING
    - Screw-in CFL reflector bulbs (ENERGY STAR® qualified)
    - Interior LED lamps (ENERGY STAR® qualified)
    - Interior LED fixtures (ENERGY STAR® qualified)
    - Interior CFL fixtures (ENERGY STAR® qualified)
    - Exterior CFL fixtures (ENERGY STAR® qualified)
    - Exterior LED lamps
    - Exterior LED fixtures
    - Occupancy sensors
    - LED pool and spa lighting
    - Photocells
    - Landscape/parking lighting
- APPLIANCES
    - High-efficiency clothes washers
    - Refrigerators (ENERGY STAR® and CEE Tier 3 qualified)
- POOLS
    - Pool and spa heater
- OTHER MEASURES
    - Cool roofs

- Radiant barriers
- Gearless elevators
- HVAC system commissioning

Eligible improvements may also include ventilation improvements that do not themselves save energy but are necessary to maintain indoor air quality in conjunction with related building energy efficiency improvements. Combustion appliance safety testing will take place as appropriate. Solar photovoltaic and solar thermal measures will not be considered as part of the energy analysis for program participation.

Program Strategy/Implementation/Proposed Interventions

Incentive programs that deliver energy and green upgrade services for single-family homes typically rely on contractors to serve as the conduit for participating in the program and providing services such as diagnostics, verification and documentation. This contractor-based approach, however, is unlikely to be successful for California's diverse for-profit multifamily and affordable-subsidized housing sector for a variety of reasons, including the fact that developers/owners prefer to work with contractors with whom they have long-established relationships rather than with program-designated contractors. For these reasons, Existing Multifamily Energy Efficiency Initiative will adopt the recommendation of the Home Energy Retrofit Coordinating Committee (HERCC) for a rater / consultant program model.

For 2013-2014, the Existing Multifamily Energy Efficiency Initiative will build upon the Los Angeles County Multifamily Pilot Program's progress to-date for energy-efficient multifamily units. The proposed interventions comprise the program approach toward reducing the identified market barriers:

Proposed Intervention	Intended Result/Outcome	Barrier Addressed
Outreach and Education – inform property owners of the potential benefits and savings	• Increase property owner motivation and demand for whole building energy efficiency	(2) Information

Proposed Intervention	Intended Result/Outcome	Barrier Addressed
Assessment Incentives – cash payments to property owners to cover the costs of property energy assessment & simulation	• Increase property owner demand • Reduce upfront assessment costs • Increase property owner/manager knowledge & awareness	(2) Information (3) Access to capital
Improvement Incentives – performance based rebates for installing energy efficiency measures and going beyond minimum standards for 180 projects, totaling 8,000 housing units	• Increase property owner demand • Reduce improvement costs	(1) Split incentives (2) Information (3) Access to capital
Technical Assistance – Single Point of Contact to assist multifamily property owners in evaluating energy efficiency opportunities and access financial resources, including available On-Bill Repayment mechanisms	• Reduce complexity and knowledge gap • Streamline program processing time • Create a pool of trained professionals • Creation of a robust quality assurance / field verification program • Optimize program incentive dollars by Increasing property owner access to other financing and incentives	(1) Split incentives (2) Information (3) Access to capital

To build upon the existing group of known professionals with the experience and credentials to execute within the Existing Multifamily Energy Efficiency Initiative, we will offer a 5-day California Multifamily Existing Building (CAMFEB) Training. The CAMFEB training combines curricula that will prepare professionals for BPI Multifamily certification exam, the "beta" HERS II Multifamily requirements, and GreenPoint Rated Multifamily Existing Buildings certification.

Incentives

The Existing Multifamily Energy Efficiency Initiative is designed specifically to motivate the multifamily property owner/manager to install whole building energy efficiency measures with incentives, information, and outreach that help alleviate the split incentive, confusion, and technical hurdles that currently exist.

The incentive structure will be tiered, based on estimated whole building site energy saving modeled in EnergyPro. Incentives are to be paid at two points in the submission process; one incentive upon completion of an investment grade audit, and one incentive on a per-unit basis, at the successful completion of the job. Costs for the ASHRAE Level 2audit and combustion appliance safety testing will be incurred by the building owner. The first incentive is expected to cover the cost of the audit and will be paid prior to the installation of any proposed measures. The second incentive will cover measures that contribute to whole building savings (i.e., central boilers, central water heaters, common area and in-unit upgrades, etc.) that have not been directly installed or incentivized via participation in another CPUC-approved program.

Figure 10 (Subprogram A): Multi-family Incentive Structure

Assessment Incentives	
<50 units	$5,000
50 units	$10,000
Improvement Incentives*	
10% improvement	$200
15% improvement	$400
20% improvement	$700
25% improvement	$950
>30% improvement	$1,200

*There is a cap of $100,000 for the Improvement Incentive

Project Pre-Qualification/Assessment/Verification

1) **Pre-Qualify Property Owner.** SoCalREN will work with the building owner to pre-qualify a building and facilitate a preliminary walk through as needed to confirm eligibility and identify energy savings opportunities. SoCalREN will provide technical assistance resources as needed to help the building owner make an informed participation decision.
2) **ASHRAE Level 2 Audit.** The Property Owner will then select a Participating Consultant, who will conduct an assessment to establish baseline conditions and generate a proposed scope of work that meets the building owner's energy savings goals. Simultaneously, a building energy simulation model and a combustion appliance safety plan will be created that is specific to the scope of work.
3) **Submit Audit Incentive Request.** The Participating Consultant will submit an Audit Incentive Request on behalf of the property owner. SoCalREN will review the proposed work scope, energy model, and combustion safety plan prior to issuance of a notice to proceed.
4) **Installation of Improvements.** The building owner will utilize a contractor of the building owner's choosing to install the agreed-upon scope of work.
5) **Quality Assurance, Test-out and Quality Control.** Upon completion of work, the Participating Consultant will perform a checklist audit with 100% verification of all installed measures. The Participating Consultant will also perform a final test-out assessment to ensure proper and safe installation of the approved scope of work, including remediation of any identified combustion appliance safety issues. SoCalREN will conduct field quality control inspections for a representative sample of jobs. Inspections will generally occur concurrently with the Participating Consultant's test out assessment.
6) **Submit Improvement Incentive Request.** After job close-out, the Participating Consultant will submit an Improvement Incentive Request on behalf of the property owner. A complete submittal includes test-out CAS and related performance test results, the client-signed form acknowledging that work has been completed per the work scope and to the property owner's satisfaction, applicable permits and the client-signed contract. Energy model files and related technical documentation do not need to be resubmitted unless material changes to the work scope have occurred since the investment grade audit. Savings related to measures installed as part of integration efforts with ESAP, MIDI, and MFEER will only be claimed under those respective programs.

Energy Savings and Modeling Software

For all low-rise multifamily buildings, SoCalREN will utilize the EnergyPro Residential Performance Module for site savings calculations. For all high-rise buildings, SoCalREN will utilize the Energy Pro, Non Res Module for measurement of savings and determination of incentive levels. SoCalREN will confer with the IOUs and BayREN on suitable alternative software packages and savings calculation methods that may be approved for use in addition to EnergyPro.

Marketing/Outreach

The Existing Multifamily Energy Efficiency Initiative targets property owners and managers of multifamily buildings located in SCE or SoCalGas service territories:

- Multifamily buildings must contain a minimum of five units for participation
- Affordable and market-rate properties qualify
- Buildings served by propane are not eligible to participate

By January 2014, the program seeks to identify up to 180 property owners with large portfolios and/or large buildings comprising approximately 8,000 units. With anticipated attrition and a goal of completing these projects by the end of 2014, these projects would be expected satisfy the goal of completing 8,000 units by the end of the program cycle.

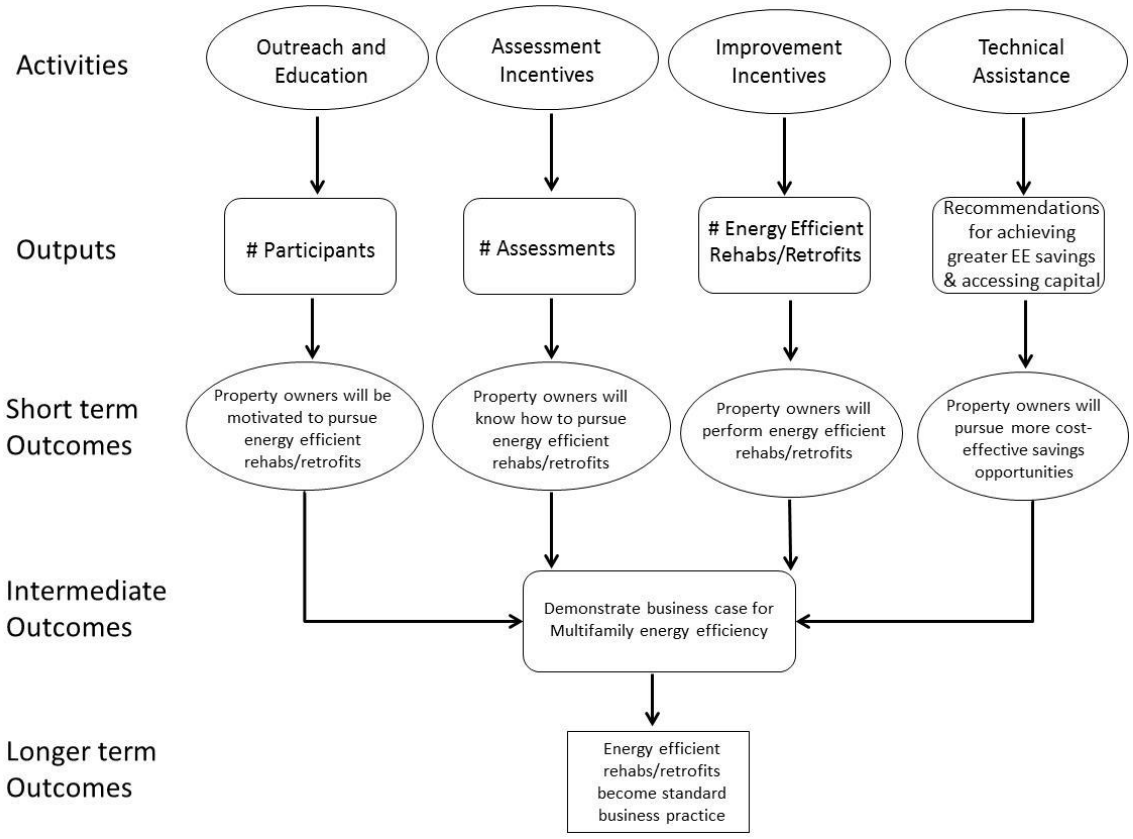
We will develop a “hotlist” of property owner participants, known properties with planned or in-progress renovations, targeted referrals from:

- Low-income tax credit program
- Trade associations for affordable housing and market-rate housing developers
- Property owners and/or managers who have expressed interest from EUC outreach events
- IOU ESA, MFEER, or MIDI programs
- On-Bill Repayment program being pilot by California Housing Partnership Corporation (CHPC) and Stewards of Affordable Housing for the Future (SAHF)

We will assist Participating Consultants in marketing program services to their client base as well.

Logic Model

Figure 12 (Subprogram A): Logic Model



Program Performance Metrics

The Existing Multifamily Energy Efficiency Initiative will adopt the following Program Performance metrics as leading or proximate indicators of success:

1) Number of participants
2) Number of energy upgrades completed
3) Level of energy efficiency improvement in energy upgrades
4) Energy Savings: kWh, therms, and KW
5) Quality Assurance Reporting: number of field verification and results, corrective actions taken

6) Number of technical assistance consultations in each region/county

Evaluation Plan

SoCalREN will work closely with ED's M&E team and the IOUs to develop an approved EM&V Plan that permits a consistent "apples-to-apples" comparison of multifamily initiatives across the entire CPUC energy efficiency portfolio. The plan is anticipated to include both process and impact evaluation components. The process evaluation is expected to address research issues such as:

1) Verification of program theory and program logic model.
2) Verification of program process and design, and assess the effectiveness of implementation and the program team's ability for ongoing process improvement
3) Verification of program QA/QC process and improvements
4) Verification of energy savings methodology and tool(s)
5) Collect customer feedback from all touch points (e.g. Property owners/managers, contractors, tenants and various program teams)
6) Implement appropriate segmentation question batteries to allow for data analysis across key target groups
7) Recommendations for program design, implementation and marketing activities

The impact evaluation is expected to examine measure installation, project-level and program-level gross and net energy savings, ex-post energy savings as a function of ex-ante forecasts, and program cost effectiveness.

In support of the EM&V planning process, SoCalREN currently plans to track a number of parameters to support evaluation of (1) the program theory and program logic model, (2) program QA/QC process, (3) energy savings methodology and tools, and (4) participant feedback, and participant segmentation. SoCalREN will be prepared to report out on preliminary program results at the mid-cycle multifamily workshop scheduled for late 2013 or early 2014 as ordered in D. 12-11-015.

Program theory and program logic model	Outreach effectiveness: • Participation relative to program goals Technical assistance effectiveness • Technical assistance provided, including number of projects receiving assistance, type of assistance provided, recommendations made • Energy savings per project, comparing it to planning targets as well as technical assistance recommendations • Quality assurance results, including number of projects requiring corrective action and the scope of corrective actions called for • Participant feedback Impact of incentives • Energy savings per project, comparing it to planning targets as well as technical assistance recommendations • Participation relative to program goals • Participant feedback
Program QA/QC process	Desktop review results: • Data values within range of expected values, based on the building's vintage and scope of work • Proposed scope of work consistent with modeling assumptions • Repairs required to address CAS test failures included in scope of work • Model results show minimum of 10% energy savings • Project has appropriate permits Field quality control inspection results: • Sample selection • Combustion appliance safety test results • Adherence to measure installation specifications • Building parameters consistent with building simulation model inputs
Energy savings methodology and tool(s)	Building simulation model input and output files, predicted ex-ante annual consumption as percentage of actual consumption
Customer feedback	Customer feedback from participating property owners/managers, consultants, and contractors, compiled via participant satisfaction surveys, workshops and forums
Participating property owner segmentation	• Building vintage, climate zone, utility providers, political subdivision (city, county) • Physical configuration (high rise / low rise) • Building ownership (affordable / market rate) • Unit ownership (Rental / condo) • Spaces targeted for improvement (tenant / common areas) • Mechanical systems (central / individual)

Relationship to IOU Programs

The SoCalREN Multifamily Incentive Program is designed to be complementary to the full set of IOU programs for the multifamily sector, including:

- Energy Upgrade California (EUC)
- Multifamily Energy Efficiency Rebate (MFEER) Program
- Energy Savings Assistance Program (ESAP)

Specific mechanisms for avoiding duplication are discussed in detail below:

Energy Upgrade California

Clearly the greatest potential for overlap between SoCalREN's proposed Multifamily Incentive and the IOU portfolio is around Energy Upgrade California. LA County's 2011-2012 multifamily pilot was designed and implemented as a multifamily component to Energy Upgrade California. The intent of the SoCalREN's proposal is to expand these two pilots to serve the entire SoCalGas/SCE service territory and, in doing so, satisfy the ongoing need for a robust multifamily component to the Energy Upgrade California. This approach extracts maximum value from the field experience gained in the LA County pilots and offers a pathway to scale these programs more quickly than the IOUs are currently proposing.

To succeed in this effort, the SoCalREN must coordinate closely with both SCE and SoCalGas on program design and implementation. The SoCalREN Multifamily Incentive Program incorporates key design elements that align with the joint utility advice letter regarding a multifamily pilot for Energy Upgrade California (Advice No. 4312-G-A, et al.):

- Comprehensive building assessments to identify potential energy savings opportunities, utilizing best practices established through BPI and HERS
- Integration with ESAP and MFEER
- Combustion appliance safety protocols consistent with industry best practices, as established by BPI
- Performance-based incentives tied to percent energy reduction on a per-dwelling unit basis
- A Single Point of Contact (SPOC) to help the property owner or manager navigate through the incentive process

Like SDG&E and consistent with the HERCC recommendations, SoCalREN adopts a consultant model for program delivery. This approach allows the property owner or manager to work with contractors with whom they have long-established relationships rather than limiting them to Program-designated contractors. More importantly, it gives the Program much needed flexibility to align its procedures with external funding and financing sources that property owners will need to access to bring a project to fruition. In addition to ESAP and MFEER, key sources include the OBR pilot, CHF and other energy efficiency finance programs that may enter the market, Low Income Housing Tax Credits, and loan programs through Fannie Mae, HUD, and the California Housing Finance Authority.

Moving forward, SoCalREN seeks to confer with both SCE and SoCalGas on a number of program design issues of particular importance to the IOUs, including but not limited to:

- Program cost-effectiveness
- Ongoing refinement of combustion appliance safety protocols
- Coordination with ESAP and MFEER
- Energy savings and modeling software
- Program evaluation, measurement, and verification
- Data sharing

Multifamily Energy Efficiency Rebate Subprogram (MFEER)

The SoCalREN Multifamily Incentive Program focuses on permanent improvements to the building. Many of the MFEER-eligible measures constitute permanent improvements and thus raise the potential for double-dipping. The SoCalREN Single Point of Contact (SPOC) will work with property owners to develop property-specific needs assessments and determine whether those needs are best met through participation in MFEER, the Multifamily Incentive Program, or a combination of the two. In doing so, the SoCalREN will coordinate with the IOUs to ensure that there is no double-dipping on technologies that might qualify for both

programs. The SoCalREN will further coordinate with the IOUs to accomplish successful program integration per the metrics established by the Commission in D.08-11-031.

Energy Savings Assistance Program

The IOUs have been directed by the CPUC to pursue full coordination between the Energy Savings Assistance Program (ESAP), Energy Upgrade California (EUC), Multifamily Energy Efficiency Rebates (MFEER), and Middle Income Direct Install (MIDI) programs. The SoCalREN is committed to accepting this mandate as extending to the Multifamily Incentive Program as well. In particular, the SoCalREN proposes to coordinate with SoCalGas and SCE to accomplish successful program integration per the metrics established by the Commission in D.08-11-031:

- Interdepartmental Coordination: Increased coordination in work efforts between departments within the utility. This type of integration results in cost and/or resource savings as well as one or both of the following:
    - Consolidation of work efforts; and
    - Elimination of overlapping and/or repetitive tasks.
- Program Coordination: Increased coordination between multiple programs managed by the utility. This type of integration results in cost and/or resource savings as well as one or both of the following:
    - Increased services provided to customers; and
    - Greater number of customers served by a program.
- Data Sharing: Increased information and data sharing between departments within the utility and/or multiple programs managed by the utility. This type of integration results in cost and/or resource savings as well as one or both of the following:

- Greater number of customers served; and
- Consolidation of work efforts.

- ME&O Coordination: Consolidation of marketing, education and outreach for multiple programs managed by the utility. This type of integration results in cost and/or resource savings as well as any or all of the following:
  - Greater number of customers reached;
  - More cost effective marketing, education and/or outreach to
  - customers; and
  - Elimination of customer confusion.

A6: Promote and support Community Development Commission (CDC) programs to achieve greater energy efficiency and green building practices in the development and rehabilitation of low-income single family residential projects - $700,000

Low Income Development Projects

Local and regional Commission programs being implemented by various local governments and local housing agencies in Southern California are promoting sustainability policies in the rehabilitation of existing residential projects as well as in new development projects.

Low Income Single Family Rehabilitation (700,000)

The two-year pilot program's main objective is to develop and implement a business process that allows for connecting Community Development Commission of the County of Los Angeles (CDC) program clients to Energy Upgrade California (EUC) through outreach and by working through and coordinating the

numerous requirements of the existing programs in order to reduce possible barriers to low-income homeowners for greater access to EUC Basic Path and Advanced Path packages.

Using a variety of Federal funding sources, the CDC offers various programs with distinct objectives and qualification criteria. The Home Improvement Program (HIP) assists low-income, owner-occupied, single-family homes with rehabilitation financing up to $15,000. The Residential Sound Insulation Program (RSIP) offers grant funds to qualified residents for needed sound insulation improvements ranging in cost from $27,000 to $32,000. This pilot program will emphasize education to rehabilitation program clients about the specific EUC packages that they are eligible for and how they may integrate EUC eligible measures into the rehabilitation work.

Outreach for EUC packages will be incorporated into the HIP and RSIP programs, which target low- and moderate-income homeowners, respectively. Strong efforts will be made to encourage and incentivize clients to incorporate cost effective, energy efficiency measures to access EUC incentives and rebates. In recent years, through various programs, the CDC has assisted with the rehabilitation of about 300 homes per year. However, due to Federal budget cuts, the CDC anticipates completing 180 homes a year. Every attempt will be made to aggressively target, inform, and assist interested clients in accessing EUC Advanced and Basic Path packages in order to enhance the scope of rehabilitation.

Another important objective of the pilot program will be to educate and train residential building rehabilitation contractors working with low income homeowners on the EUC programs and encourage them to become EUC participating contractors. These efforts will lead to the same comprehensive upgrades in the rehabilitation of low-income homes that occur under standard EUC single-family residences.

Outreach and marketing for EUC packages will be incorporated in all CDC rehabilitation programs. Outreach and marketing efforts for HIP will be expanded to target a larger pool of eligible low-income homeowners; this may include community events, mailers in various languages, billboards in low-income

communities, and door-hangers among other approaches. It should be noted that although energy efficiency may be desirable to low-income homeowners, it is not something they may always be able to justify even with the assistance of various programs. Identifying and minimizing the barriers to access EUC programs will be an emphasis of this pilot program.

Figure 14 represents the number of homes to outreach for EUC. However, the actual number of residential rehabilitations to be completed that incorporate energy efficiency is anticipated to be less. This pilot program will be important to assess the priority level energy efficiency improvement has for low-income homeowners and how to best overcome barriers to access the EUC programs.

Figure 14 (Subprogram A): Outreach Targets for Incorporating EUC into Low- and Moderate-Income Programs

Programs		Energy Efficiency Increment	Location	Est. Number of Homes		
				2013	2014	Total
1	Residential Sound Insulation (RSI) Program (Grant)	EUC: Basic or Advanced Path	Unincorporated Lennox, Del Aire, Athens	25	25	50
2	Home Improvement Program (Loan)	EUC Basic Path or Advanced Path	Unincorporated LA County	375	375	750
			TOTAL	**400**	**400**	**800**

*Due to reductions in federal funding and sequestration, the HOME Rehabilitation program which served participating cities is no longer being offered. Consequently, only unincorporated areas will be served by the Home Improvement program.

Two-Year Pilot Program Overview

1) Integrate outreach for EUC Advanced and Basic Paths into CDC's single-family home rehabilitation and sound insulation programs by:
    a. Developing and implementing a business process that allows for connecting CDC program clients to EUC packages.
    b. Outreach to and personally engagement with 400 eligible homeowners a year and targeting for completion of 70 Basic Path and 10 Advanced Path projects a year. Because the $1,000

special incentive is being removed, the estimate for outreach is adjusted upward to reflect expanded efforts, and the project completion estimate is adjusted downward since it will be more challenging for HIP clients to participate in EUC incentives without the special incentive. These estimates may need to be adjusted again once modifications are finalized for the Basic Path.

2) A detailed program design period will take place during the first 4 to 6 months of 2013. Program design includes:
    a. Training CDC staff in EUC program requirements.
    b. Designing the implementation plan. This includes resolving conflicts between program requirements, identifying and mitigating barriers to low-income homeowners, and preparing a thorough cost analysis of overlapping eligible energy efficiency measures.
    c. Designing the marketing efforts needed and coordinating outreach efforts to homeowners and general contractors.
    d. Training and educating general contractors on EUC program to encourage participation in EUC.

CDC Programs

RSIP provides grants to eligible single-family homes and rental units impacted by airline take-off and landing path noise levels caused by the Los Angeles International Airport (LAX). The eligible geographic areas are designated by the CDC as low- and medium-income. The RSIP program insulates homes from aircraft noise, thereby providing sound insulation improvements such as: sound rated doors and windows, replacement of exterior vents with vent baffling, attic insulation and attic ventilation, sound deadening double wall modifications, acoustic and vent louvers, and kitchen and bathroom exhaust modifications among others. However, many measures, whether required or eligible under EUC, are not eligible costs under RSIP, for example, energy assessment, wall insulation, hot water pipe insulation, thermostatic shut-off valve, combustion testing, air sealing, and duct sealing. One challenge for this pilot would be to encourage clients to incur additional costs to cover the energy efficiency measures needed to achieve an EUC incentive, but

not covered by the RSIP grant program. The second challenge would be to establish a method to determine the energy efficiency contributed by eligible measures not covered under RSIP in order to obtain the EUC incentive.

RSIP will incorporate outreach for EUC Basic and Advanced Package, and for interested clients, facilitate integration of energy efficiency measures into the RSIP program work for single-family homes only. The cost per project for sound insulation ranges from approximately $27,000 to $32,000 depending on the condition of the property and what is needed to achieve a maximum interior noise level of 45 decibels. The RSIP program operates in Lennox, Del Aire and Athens; areas, which are directly affected by the LAX flight path.

In contrast, HIP offers up to $15,000 for repairs and improvements. It is designed to help low-income qualified homeowners with repairs to single-family units. Eligible repairs include electrical, plumbing, heating, roofing, exterior painting, windows, and elimination of code violations. The current scope of work is narrow and the repairs needed may not always be energy efficiency related. Thus, the regular measures for HIP will be modified, to the extent feasible, to require some measures that are part of the Basic Package. A determination will be made on changes to HIP once modifications are finalized for the EUC Basic Path. It is anticipated that if some of the very basic energy efficiency components are made standard for all HIP participants, that it may be easier to obtain client interest to achieve a full EUC package. The primary challenge for the HIP program remains how to cover the incremental energy efficiency costs to complete an EUC package when the home rehabilitation components require the full $15,000 loan amount.

In an effort to reduce costs incurred by the homeowner, at the application stage, CDC staff will check client eligibility for the Energy Savings Assistance Program (ESAP). Clients will be directed to apply for ESAP prior to incurring costs associated with the EUC Package. As part of this pilot, CDC staff will track participation in ESAP by HIP clients.

In accordance with HIP program funding requirements, marketing and outreach efforts will target homeowners earning 80% County Area Median Income (AMI) or below; AMI income limits are issued annually by the U.S. Department of Housing and Urban Development. Because of the difficulty anticipated in getting participation by very low-income homeowners, the CDC will expand and tailor its outreach efforts to strategically target homeowners at 75%-80% AMI. Outreach will include informing clients about opportunities for EUC Basic and Advanced Package incentives even if the client does not reside in unincorporated areas of Los Angeles County

Outreach to General Contractors

Under both programs, CDC-qualified contractors will be encouraged to go through the EUC training and certification process to become participating EUC contractors. While the general contractors performing rehabilitation work for the CDC are licensed, the challenge this pilot would work through is getting small to medium size contractors interested in investing in the necessary training for the Building Performance Institute (BPI) Accreditation to be eligible to offer the EUC Advanced Upgrade Package.

For the different programs, CDC staff will serve as the homeowners' representative in each of the participating rehabilitation and sound insulation projects. CDC staff will engage existing EUC participating contractors and CDC-qualified contractors that have completed all EUC requirements through this pilot to provide the client home improvements with energy efficiency upgrades eligible for EUC incentives.

Mortgage Credit Certificate for Energy Efficiency Feasibility Study

The Internal Revenue code authorizes government entities to issue Mortgage Revenue Bonds and Mortgage Credit Certificates (MCC). MCCs provide eligible borrowers with a federal income tax credit equal to a specified percentage (10-50%, as determined by the locality) of the mortgage interest paid each year on

a qualified loan. The tax credits are available on an allocation basis by states, requested and administered by local agencies, and coordinated with residential lenders.

In early 2013, the California Debt Limit Allocation Committee approved MCCs for energy efficiency (MCC-EE) as eligible under a qualified loan program. The CDC will conduct a feasibility study that will include research current jurisdictions that are administering MCC-EE programs and developing an implementation plan that incorporates best practices to make MCC-EE available to residents of Los Angeles County.

The proposed feasibility study would be for a MCC-EE program that would be available to all homeowners and would provide an alternative financing program for energy upgrades. The scope of the study includes examining the demand for participation by private lenders, outline operating procedures and guidelines, estimate the energy efficiency retrofit loan, and identify opportunities for leveraging EUC incentives.

Currently, the MCC-EE program requires that borrowers participate in an interest-bearing loan program. The CDC has identified this requirement as an impediment for low-income borrowers participating in the HIP program, even though these are zero interest, deferred loans. In order to implement the MCC-EE program, administrative functions would need to be undertaken by CDC staff which would create an administrative burden. By contrast, the administration of the current MCC program is conducted by the third-party lender rather than in-house by the CDC. Moreover, the CDC does not have funds available to lend. The feasibility study will research further barriers for implementing a Los Angeles County MCC-EE program as well as propose possible sceneries in which such program can be offered.

END OF DESCRIPTION OF SUBPROGRAM A: EUC

b) **Sub-Program Energy and Demand Objectives**

Table 5 (Subprogram A): Projected Sub-Program Net Energy and Demand Impacts, by Calendar Year

	Program Years		
	2013	**2014**	**Total**
Subprogram A: Energy Upgrade			
GWh	2.9 (3.4 gross)	4.4 (5.2 gross)	7.3 (8.6 gross)
Peak MW	1.4 (1.6 gross)	2.1 (2.4 gross)	3.4 (4.0 gross)
Therms (millions)	0.15 (0.17 gross)	0.22 (0.26 gross)	0.37 (0.43 gross)

c) **Program Non-Energy Objectives**:

SMART non-energy objectives of Subprogram A:

- During the period 2013–2014, the average cost of an energy efficiency project, including all Advanced Package, Basic Package, and Flex Path jobs, will be reduced by 25 percent.
- During the period 2013–2014, the number of contractors registered as Energy Upgrade Participating Contractors participating in the six-county Southern California Area will increase by 20 percent.
- During the period 2013–2014, marketing and outreach activities will create at least 300 million impressions.
- During the period 2013–2014, 500 individuals will be trained in one of the following: sales and customer relations, small business best practices, marketing and messaging, and job sequencing.

Average project costs and rebates for IOU Basic and Advanced Packages have been provided to LA County by SCE/SCG, based upon completed projects to date.

Statistics on Energy Upgrade Participating Contractors are provided by SCE, and the total number of Participating Contractor in a county is available at www.energyupgradeca.org.

Table 3 (Subprogram A): Quantitative Subprogram Targets (PPMs)

Target	2013	2014
Number of homes or buildings treated	951 (Flex Path) +90 (MF)	1,425 (Flex Path) +90 (MF)
Number of units incented or rebated	2,378 (Flex Path) +4,000 (MF)	3,563 (Flex Path) +4,000 (MF)

d) **Cost Effectiveness/Market Need**: What methods will be or have been used to determine whether this program is cost-effective?[13] If this is a non-resource program, describe the literature, market assessments or other sources that indicate a need for this program.

In order to determine the energy savings expected with the Flex Package program, we adapted the calculation methodology recommended by the Commission reviewer during work paper development for the 2010-2012 Whole House Retrofit Program (now the Whole-House Upgrade Program). The Whole House Retrofit Program is similar to Flex Package in that multiple measures are to be completed under each retrofit project, and thus, the interactive effects of the measures need to be taken into account, use of EnergyPro to determine the modeled energy savings, provided that the simulation model of a pre-retrofit house could be shown to generate energy usage similar to that of a corresponding home in the DEER database. Once such a model was created for a given vintage and climate zone, we could apply values from the statewide

[13] If the program has energy and demand objectives, simply state that the methods contained in the Standard Practice Manual will be used. If the program does not have energy and demand objective, propose an approach to assess cost-effectiveness.

Residential Appliance Saturation Survey (RASS) database for the target population in each climate zone and vintage expected to participate.

An EnergyPro model was created for each climate zone and vintage range (pre-1978 and 1978-1992), and calibrated against the DEER database specifications for such single family homes. The kWh, therms, kW, and overall BTU percent savings were determined for each retrofit measure.

e) **Measure Savings/ Work Papers**:

a. Indicate data source for savings estimates for program measures (DEER, custom measures, etc). Can provide Title 24 Compliance Reports for past, implemented multifamily new development and rehabilitation projects. These reports require contractors to quantify energy savings beyond baseline requirements (Title 24). Single family rehabilitation project savings will utilize EUC program savings metrics.

In order to determine the energy savings expected with the Flex Path and Multi-family program, the calculation methodology recommended by the Commission reviewer during work paper development for the 2010-2012 Whole House Retrofit Program (now the Whole-House Upgrade Program) was adopted. The Whole House Retrofit Program is similar to Flex Path in that multiple measures are to be completed under each retrofit project, and thus, the interactive effects of the measures need to be taken into account, use of EnergyPro to determine the modeled energy savings, provided that the simulation model of a pre-retrofit house could be shown to generate energy usage similar to that of a corresponding home in the DEER database. Once such a model was created for a given vintage and climate zone, values from the statewide Residential Appliance Saturation Survey (RASS) database for the target population in each climate zone and vintage expected to participate were applied.

An EnergyPro model was created for each climate zone and vintage range (pre-1978 and 1978-1992), and calibrated against the DEER database specifications for such single family homes. The kWh, therms, kW, and overall BTU percent savings were determined for each retrofit measure.

b. Indicate work paper status for program measures:

Table 4 (Subprogram A): Work Paper Status

#	Workpaper Number/Measure Name	Approved	Pending Approval	Submitted but Awaiting Review
	FLEX PATH			
1	HVAC 0.80 AFUE/AC 10 SEER - Attic Insulation (R-0 to R-38)		X	
2	HVAC 0.80 AFUE/AC 10 SEER - Attic Insulation (R-5 to R-38)		X	
3	HVAC 0.80 AFUE/AC 10 SEER - Attic Insulation (R-11 to R-38)		X	
4	HVAC 0.80 AFUE/AC 10 SEER - Attic Insulation (R-19 to R-38)		X	
5	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-0 to R-0 Continuous)		X	
6	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-0 to R-0 Sheathing)		X	
7	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-5 to R-5 Continuous)		X	
8	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-5 to R-5 Sheathing)		X	
9	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-11 to R-11 Continuous)		X	
10	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-11 to R-11 Sheathing)		X	
11	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-19 to R-19 Continuous)		X	
12	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-19 to R-19 Sheathing)		X	
13	HVAC 0.80 AFUE/AC 10 SEER - Cool Roof (R-0 to R-38)		X	
14	HVAC 0.80 AFUE/AC 10 SEER - Cool Roof (R-5 to R-38)		X	
15	HVAC 0.80 AFUE/AC 10 SEER - Cool Roof (R-11 to R-38)		X	
16	HVAC 0.80 AFUE/AC 10 SEER - Cool Roof (R-19 to R-38)		X	
17	HVAC 0.80 AFUE/AC 10 SEER - Wall Insulation (R-0 to R-13)		X	
18	HVAC 0.80 AFUE/AC 10 SEER - Building leakage		X	

19	HVAC 0.80 AFUE/AC 10 SEER - Replace Windows (SMC to Vinyl Low E)		X	
20	Heat Pump 10 SEER - Attic Insulation (R-0 to R-38)		X	
21	Heat Pump 10 SEER - Attic Insulation (R-5 to R-38)		X	
22	Heat Pump 10 SEER - Attic Insulation (R-11 to R-38)		X	
23	Heat Pump 10 SEER - Attic Insulation (R-19 to R-38)		X	
24	Heat Pump 10 SEER - Radiant Barrier (R-0 to R-0 Continuous)		X	
25	Heat Pump 10 SEER - Radiant Barrier (R-0 to R-0 Sheathing)		X	
26	Heat Pump 10 SEER - Radiant Barrier (R-5 to R-5 Continuous)		X	
27	Heat Pump 10 SEER - Radiant Barrier (R-5 to R-5 Sheathing)		X	
28	Heat Pump 10 SEER - Radiant Barrier (R-11 to R-11 Continuous)		X	
29	Heat Pump 10 SEER - Radiant Barrier (R-11 to R-11 Sheathing)		X	
30	Heat Pump 10 SEER - Radiant Barrier (R-19 to R-19 Continuous)		X	
31	Heat Pump 10 SEER - Radiant Barrier (R-19 to R-19 Sheathing)		X	
32	Heat Pump 10 SEER - Cool Roof (R-0 to R-38)		X	
33	Heat Pump 10 SEER - Cool Roof (R-5 to R-38)		X	
34	Heat Pump 10 SEER - Cool Roof (R-11 to R-38)		X	
35	Heat Pump 10 SEER - Cool Roof (R-19 to R-38)		X	
36	Heat Pump 10 SEER - Wall Insulation (R-0 to R-13)		X	
37	Heat Pump 10 SEER - Building leakage		X	
38	Heat Pump 10 SEER - Replace Windows (SMC to Vinyl Low E)		X	
39	Replace gas-fired furnace and AC (0.92 AFUE. 15 SEER 11 EER)		X	
40	Replace gas-fired furnace and AC (0.95 AFUE. 15 SEER 11 EER)		X	
41	Replace gas-fired furnace and AC (new HVAC: HP 8HSPF & 15 SEER. 11 EER)		X	
42	Replace furnace (new furnace: 0.95 AFUE)		X	
43	Replace AC (new AC: 15 SEER 11 EER)		X	
44	Replace Heat Pump (new HVAC: 8 HSPF. 15 SEER 11 EER)		X	
45	Duct sealing (28% to 6%)		X	
46	Duct sealing (28% to 10%)		X	
47	Duct sealing (28% to 15%)		X	
48	Duct insulation (R-2.1 to R-8)		X	
49	Duct insulation (R-4 to R-8)		X	
50	Duct replacement (R-4, 28% to R-8, 6%)		X	
51	Crawlspace Insulation		X	
52	DHW (gas-fired 0.525 EF to 0.620 EF)		X	
53	DHW (gas-fired to 0.525 EF to tankless 0.88 EF)		X	
54	Replace Thermostat		X	
	MULTI-FAMILY			
1	HVAC 0.80 AFUE/AC 10 SEER - Attic Insulation (R-0 to R-38)		X	
2	HVAC 0.80 AFUE/AC 10 SEER - Attic Insulation (R-5 to R-38)		X	

3	HVAC 0.80 AFUE/AC 10 SEER - Attic Insulation (R-11 to R-38)		X	
4	HVAC 0.80 AFUE/AC 10 SEER - Attic Insulation (R-19 to R-38)		X	
5	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-0 to R-0 Continuous)		X	
6	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-0 to R-0 Sheathing)		X	
7	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-5 to R-5 Continuous)		X	
8	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-5 to R-5 Sheathing)		X	
9	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-11 to R-11 Continuous)		X	
10	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-11 to R-11 Sheathing)		X	
11	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-19 to R-19 Continuous)		X	
12	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-19 to R-19 Sheathing)		X	
13	HVAC 0.80 AFUE/AC 10 SEER - Cool Roof (R-0 to R-38)		X	
14	HVAC 0.80 AFUE/AC 10 SEER - Cool Roof (R-5 to R-38)		X	
15	HVAC 0.80 AFUE/AC 10 SEER - Cool Roof (R-11 to R-38)		X	
16	HVAC 0.80 AFUE/AC 10 SEER - Cool Roof (R-19 to R-38)		X	
17	HVAC 0.80 AFUE/AC 10 SEER - Wall Insulation (R-0 to R-13)		X	
18	HVAC 0.80 AFUE/AC 10 SEER - Building leakage		X	
19	HVAC 0.80 AFUE/AC 10 SEER - Replace Windows (SMC to Vinyl Low E)		X	
20	Heat Pump 10 SEER - Attic Insulation (R-0 to R-38)		X	
21	Heat Pump 10 SEER - Attic Insulation (R-5 to R-38)		X	
22	Heat Pump 10 SEER - Attic Insulation (R-11 to R-38)		X	
23	Heat Pump 10 SEER - Attic Insulation (R-19 to R-38)		X	
24	Heat Pump 10 SEER - Radiant Barrier (R-0 to R-0 Continuous)		X	
25	Heat Pump 10 SEER - Radiant Barrier (R-0 to R-0 Sheathing)		X	
26	Heat Pump 10 SEER - Radiant Barrier (R-5 to R-5 Continuous)		X	
27	Heat Pump 10 SEER - Radiant Barrier (R-5 to R-5 Sheathing)		X	
28	Heat Pump 10 SEER - Radiant Barrier (R-11 to R-11 Continuous)		X	
29	Heat Pump 10 SEER - Radiant Barrier (R-11 to R-11 Sheathing)		X	
30	Heat Pump 10 SEER - Radiant Barrier (R-19 to R-19 Continuous)		X	
31	Heat Pump 10 SEER - Radiant Barrier (R-19 to R-19 Sheathing)		X	
32	Heat Pump 10 SEER - Cool Roof (R-0 to R-38)		X	
33	Heat Pump 10 SEER - Cool Roof (R-5 to R-38)		X	
34	Heat Pump 10 SEER - Cool Roof (R-11 to R-38)		X	

35	Heat Pump 10 SEER - Cool Roof (R-19 to R-38)		X	
36	Heat Pump 10 SEER - Wall Insulation (R-0 to R-13)		X	
37	Heat Pump 10 SEER - Building leakage		X	
38	Heat Pump 10 SEER - Replace Windows (SMC to Vinyl Low E)		X	
39	Replace gas-fired furnace and AC (0.92 AFUE. 15 SEER 11 EER)		X	
40	Replace gas-fired furnace and AC (0.95 AFUE. 15 SEER 11 EER)		X	
41	Replace gas-fired furnace and AC (new HVAC: HP 8HSPF & 15 SEER. 11 EER)		X	
42	Replace furnace (new furnace: 0.95 AFUE)		X	
43	Replace AC (new AC: 15 SEER 11 EER)		X	
44	Replace Heat Pump (new HVAC: 8 HSPF. 15 SEER 11 EER)		X	
45	Duct sealing (28% to 6%)		X	
46	Duct sealing (28% to 10%)		X	
47	Duct sealing (28% to 15%)		X	
48	Duct insulation (R-2.1 to R-8)		X	
49	Duct insulation (R-4 to R-8)		X	
50	Duct replacement (R-4, 28% to R-8, 6%)		X	
51	Crawlspace Insulation		X	
52	DHW (gas-fired 0.525 EF to 0.620 EF)		X	
53	DHW (gas-fired to 0.525 EF to tankless 0.88 EF)		X	
54	Replace Thermostat		X	

10) Program Implementation Details

a) **Timelines:** List the key program milestones and dates. An example is included below.

Table 5 (Subprogram A): Subprogram Milestones and Timeline

Milestone	Date
Project Initiation Meeting	Within 1 week of NTP
Regional Marketing Strategy Developed	4 weeks after NTP
Regional Flex Path Program Launch	4 weeks after NTP
Regional Marketing and Outreach Launch	4/1/2013
Community Development Program Launch	4/1/2013
Installations Completed. All Incentives Closed to New Applications	10/31/2014
Final Incentives Issued	12/8/2014

Conclude Program	12/31/2014
Quarterly Progress Reports	3/31/2013 – 12/8/2014

b) **Geographic Scope**: List the geographic regions (e.g., CEC weather zones) where the program will operate

Table 6 (Subprogram A): Geographic Regions Where the Subprogram Will Operate

Geographic Region	Energy Upgrade Subprogram
CEC Climate Zone 1	
CEC Climate Zone 2	
CEC Climate Zone 3	
CEC Climate Zone 4	
CEC Climate Zone 5	X
CEC Climate Zone 6	X
CEC Climate Zone 7	X
CEC Climate Zone 8	X
CEC Climate Zone 9	X
CEC Climate Zone 10	X
CEC Climate Zone 11	
CEC Climate Zone 12	
CEC Climate Zone 13	X
CEC Climate Zone 14	X
CEC Climate Zone 15	X
CEC Climate Zone 16	X

c) Program Administration

Table 7 (Subprogram A): Program Administration of Program Components

Program Name	Subprogram Component	Implemented by IOU staff (X = Yes)	Implemented by contractors to be selected by competitive bid process	Implemented by contractors NOT selected by competitive bid process	Implemented by local government or other entity (X = Yes)
Energy Upgrade Expansion	A1: Energy Upgrade marketing and outreach				X (LA County)
	A2: Green Building Labeling				X (LA County)
	A3: Flex Path				X (LA County)
	A4: EUCLA Contractor outreach and training				X (LA County)
	A5: Multi-family				X (LA County)
	A6: Low-Income Single Family				X (LA County)

d) Program Eligibility Requirements:

i. Customers: List any customer eligibility requirements (e.g., annual energy use, peak kW demand):

Table 8 (Subprogram A): Customer Eligibility Requirements

Customer Eligibility Requirement	SCE
Green Building Labeling: Property must be located in IOU service territory.	X
Flex Path: Property must be located in IOU service territory. Single-Family Detached Housing.	X
Multi-family: Property must be located IOU service territory. Multi-Family Housing (defined as 5+ units). May require a test-in/test-out and a combustion safety test. Post-installation inspection.	X
Community Development: Low-Rise or High-Rise. Property must be located in IOU service territory.	X

ii. **Contractors/Participants:** List any contractor (and/or developer, manufacturer, retailer or other "participant") eligibility requirements (e.g. specific IOU required trainings; specific contractor accreditations; and/or, specific technician certifications required).

Table 9 (Subprogram A): Contractor/Participant Eligibility Requirements

Contractor Eligibility Requirement	SCE
Green Building Labeling: Must be an Energy Upgrade California Participating Contractor, including: California Licensed Contractor in Good Standing, liability insurance, BPI Certified Analyst on staff, other training as required. Other TBD.	X
Flex Path: Must be an Energy Upgrade California Participating Contractor, including: California Licensed Contractor in Good Standing, liability insurance, BPI Certified Analyst on staff, other training as required. Other TBD.	X
Multi-family: Must be an Energy Upgrade California Participating Contractor, including: California Licensed Contractor in Good Standing, liability insurance, BPI Certified Analyst on staff, other training as required. Other TBD.	X
Community Development: Must be an Energy Upgrade California Participating Contractor, including: California Licensed Contractor in Good Standing, liability insurance, BPI Certified Analyst on staff, other training as required. Other TBD.	X

e) **Program Partners:**

a) **Manufacturer/Retailer/Distributor partners:** For upstream or midstream incentive and/or buy down programs indicate:

Table 10 (Subprogram A): Manufacturer/Retailer/Distributor Partners (Not Included)

Manufacturer/Retailer/Distributor Partner Information	SCE
Manufacturers enrolled in program	None
Manufacturers targeted for enrollment in program	None
Retailers enrolled in program	None
Retailers targeted for enrollment in program	None
Distributors enrolled in program	None
Distributors targeted for enrollment in program	HVAC

b) **Other key program partners**:

Other key program partners include the following:

- Los Angeles Department of Water and Power
- Los Angeles Regional Collaborative (LARC)
- City of Los Angeles
- University of California Los Angeles Institute of Environment and Sustainability
- Long Beach Gas & Oil
- Pasadena Water & Power
- Glendale Water & Power
- Azusa Light & Water
- City of Vernon Light & Power
- Anaheim Municipal Utility District
- Moreno Valley Electric Utility
- City of Corona Department of Water & Power
- City of Riverside Public Utilities
- Metropolitan Water District
- Irvine Ranch Water District
- Santa Ana Watershed Project Authority
- Southern California Association of Governments (SCAG)
- Southern California Air Quality Management District (SCAQMD)

f) **Measures and incentive levels**: E3 calculators will provide the list of measures and incentive levels to be provided via the program. In this section the utilities should provide a summary table of measures and incentive levels.

Flex Path incentives are based on a variable mix of measures, both electric and gas, which are selected from a menu of options by the property owner.

The Multi-family incentives are tiered based on energy savings.

Table 11 (Subprogram A): Summary Table of Measures, Incentive Levels and Verification Rates

Measure Group (measure combinations based on actual Flex Path projects)	Market Actor Receiving Incentive or Rebate	IOUs	
		Incentive Level	Installation Sampling Rate
wall insulation + attic insulation + air sealing	Homeowner or Contractor	$1,500	20%
attic insulation + air sealing + duct insulation & sealing	Homeowner or Contractor	$1,500	20%
wall insulation + replace windows	Homeowner or Contractor	$1,500	20%

replace furnace + replace A/C + thermostat	Homeowner or Contractor	$1,500	20%
replace furnace + thermostat + duct insulation & sealing	Homeowner or Contractor	$1,500	20%
wall insulation + pipe wrap + low-flow fixtures	Homeowner or Contractor	$1,500	20%
crawlspace insulation + attic insulation + air sealing	Homeowner or Contractor	$1,500	20%
crawlspace insulation + duct insulation & sealing	Homeowner or Contractor	$1,500	20%
air sealing + duct insulation & sealing	Homeowner or Contractor	$1,500	20%
replace a/c + thermostat + duct insulation & sealing	Homeowner or Contractor	$1,500	20%
thermostat + duct insulation & sealing	Homeowner or Contractor	$1,500	20%
replace a/c + duct insulation & sealing	Homeowner or Contractor	$1,500	20%
replace a/c + thermostat + pipe wrap	Homeowner or Contractor	$1,500	20%
attic insulation + air sealing + windows	Homeowner or Contractor	$1,500	20%
attic insulation + attic radiant barrier + pipe wrap + low-flow fixtures	Homeowner or Contractor	$1,500	20%
wall insulation + duct insulation & sealing + pipe wrap + low-flow fixtures	Homeowner or Contractor	$1,500	20%
duct insulation & sealing + pipe wrap	Homeowner or Contractor	$1,500	20%
wall insulation + low-flow fixtures + lighting fixtures	Homeowner or Contractor	$1,500	20%
replace furnace + thermostat + pipe wrap	Homeowner or Contractor	$1,500	20%
replace furnace + replace A/C	Homeowner or Contractor	$1,500	20%
wall insulation + thermostat + pipe wrap	Homeowner or Contractor	$1,500	20%
attic radiant barrier + windows	Homeowner or Contractor	$1,500	20%
replace furnace + duct insulation & sealing	Homeowner or Contractor	$1,500	20%
crawlspace insulation + replace DHW	Homeowner or Contractor	$1,500	20%
Multi-family measures (refer to Table 4 and Exhibit A1)	Building Owners	Varies by Project	100% desktop, 15% field

g) **Additional Services:** List additional services that the sub-program will provide, to which market actors.

a. For each service provided, indicate any expected charges to market actors of the services, and/or the level at which any such services will be incented or funded.

Table 12 (Subprogram A): Additional Services

Additional Services that the Sub-Program Will Provide	To Which Market Actors	IOU
Assessment Vouchers	Contractors	$300
Energy Upgrade Coupon	Homeowners	$200
Energy Champions (Basic or Flex Path/Advanced Path)	NonProfit Organizations	$200/$400
Environmental Information Center	Homeowners	$0
Social Media	Homeowners	$0
Green Building Labeling (GB Elements/GB Label)	Homeowners	$1,000/$2,000
Flex Path Retrofit Program	Homeowners	$1,500
Heating, Ventilation, and Air Conditioning	Contractors	$500
Contractor Co-op Marketing	Contractors	Up to $40,000

h) **Sub-Program Specific Marketing and Outreach:** Please describe, providing timelines (suggested word limit: 300 words)

A detailed description is provided in prior section on Energy Upgrade Marketing and Outreach in Subprogram A1.

Figure 15 (Subprogram A): Marketing and Outreach Timeline

Marketing and Outreach Timeline	Date
Marketing & Outreach Kickoff Meeting	2/1/2013
Develop comprehensive Regional Marketing Strategy to include all Energy Upgrade components, such as Flex Path, Assessment Vouchers, Coupons, Energy Champions, Social Media and Community Development Program, Green Building Labeling and Contractor Outreach	2/15/2013
Finalize Regional Marketing and Outreach Strategy	3/1/2013

Launch of Regional Marketing and Outreach Strategy	4/1/2013
Ongoing Implementation and Launch of Regional Marketing and Outreach Strategy	4/1/2013 – 9/30/2014
Ramp-down	10/1/2014
Conclude Program	12/31/2014

i) **Sub-Program Specific Training:** Please describe, providing timelines (suggested word limit: 300 words)

The success of the whole building upgrade industry and Energy Upgrade incentive programs depends upon Participating Contractors' ability to navigate and excel within an evolving marketplace and deliver high quality upgrades. This marketplace is being shaped by the IOUs, RENs, and other program partners, so wherever possible these partners should provide coordinated support to help Participating Contractors and have a clear and accessible entry point for contractors who wish to take on whole-house efficiency services.

Through the Whole House Program and other educational efforts, the IOUs have provided technical training offerings that familiarize contractors with the knowledge and technical skills needed to install energy efficiency upgrades and ensure client health and safety. In the ARRA period, SoCalREN partners coordinated with training organizations such as the California Building Performance Contractors Association, Build It Green, EnergyPro, and others to develop and deliver in-class trainings and field mentoring that addressed these gaps.

In 2013-2014, SoCalREN will expand the training and mentoring efforts started during the ARRA period and continue to collaborate with workforce and training organizations to identify training needs and use existing or new trainings to fill critical skills gaps. Trainings will be coordinated with IOU trainings, and

announced through SoCalREN and IOU contactor outreach channels. Using this approach, SoCalREN will be able to train a minimum of 500 building professionals in the 2013–2014 period in the following areas:

- Quality Installations, Especially HVAC Installations
- Sales and Marketing
- Client Management Before, During and After a Project
- Business Management and Administration
- Energy Pro Modeling (Basic and Advanced classes)
- BPI Field Mentoring-job sequencing, proper equipment, use, customer interactions

j) **Sub-Program Software and/or Additional Tools:**

a. List all eligible software or similar tools required for sub-program participation.

This Subprogram A will continue to require Energy Upgrade-approved software in order to conduct energy assessments. As possible and appropriate, SoCalREN will consider promoting new technologies available to Participating Contractors to facilitate their energy modeling activities.

b. Indicate if pre and/or post implementation audits will be required for the sub-program.

Pre-implementation audit required X Yes ___ No

Post-implementation audit required X Yes ___ No

c. As applicable, indicate levels at which such audits shall be rebated or funded, and to whom such rebates/funding will be provided (i.e. to customer or contractor).

Table 13 (Subprogram A): Program Related Audits

Levels at Which Program Related Audits Are Rebated or Funded	Who Receives the Rebate/Funding (Customer or Contractor)
$300 Assessment Voucher	Customer or Contractor (Customer may sign incentive over to Contractor)
Up to $10,000 for Multifamily retrofit program	Customer or Contractor

k) **Sub-Program Quality Assurance Provisions:** Please list quality assurance, quality control, including accreditations/certification or other credentials

Table 14 (Subprogram A): Quality Assurance Provisions

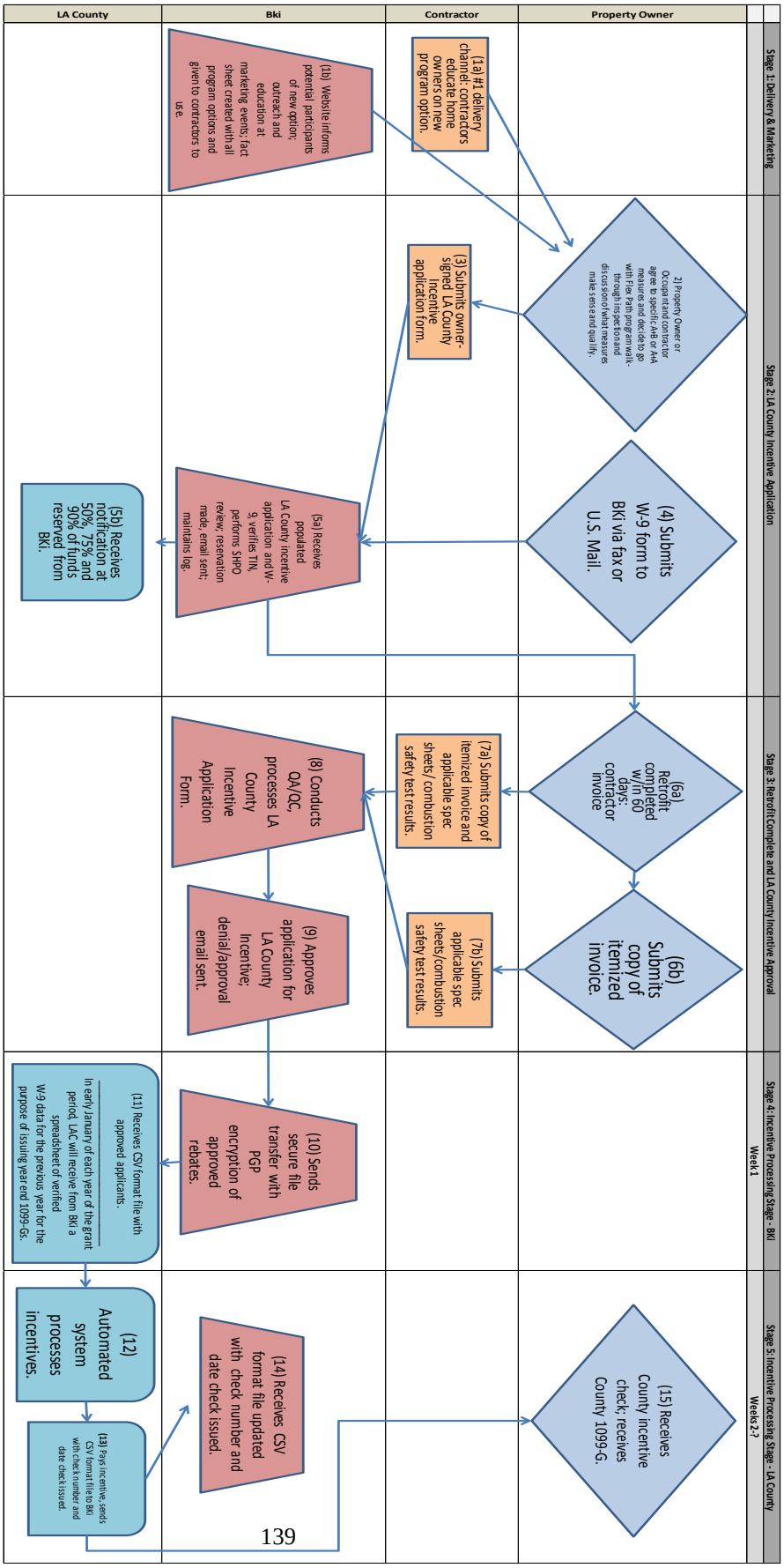
QA Requirements	QA Sampling Rate (Indicate Pre/Post Sample)	QA Personnel Certification Requirements
Flex Path Incentive Program : Property must meet eligibility requirements for measures installed.	20% Post Installation	BPI Analyst Certification
Multi-family : Property must meet eligibility requirements for measures installed.	100% Pre/20% Post Installation	BPI Analyst Certification
Community Development : TBD	TBD	TBD

l) **Sub-program Delivery Method and Measure Installation /Marketing or Training:** Briefly describe any additional sub-program delivery and measure installation and/or marketing & outreach, training and/or other services provided, if not yet described above.

m) **Sub-program Process Flow Chart:** Provide a sub-program process flow chart that describes the administrative and procedural components of the sub-program. For example, the flow chart might describe a customer's submittal of an application, the screening of the application, the approval/disapproval of an application, verification of purchase or installation, the processing and payment of incentives, and any quality control activities.

Please see Figure 16.

Figure 16 (Subprogram A): Flow Chart



n) Cross-cutting Sub-program and Non-IOU Partner Coordination: Indicate other IOU EE, DR or DG sub-programs with which this sub-program will regularly coordinate. Indicate also key non-IOU coordination partners. Indicate expected coordination mechanisms[14] and frequency[15]:

Table 15 (Subprogram A): Cross-cutting Sub-program and Non-IOU Partner Coordination

Subprogram A: Energy Upgrade California		
Other REN Subprograms	**Coordination Mechanism**	**Expected Frequency**
Financing	Project referrals	As requested by contractor/homeowner
SoCalREC	Meetings, other regular communication	As needed to ensure consistency of message and increase efficiency of local government outreach
IOU Programs	**Coordination Mechanism**	**Expected Frequency**
IOU Whole House Upgrade Program (Energy Upgrade California)	Meetings, communication, participating contractor and QA updates	Bi-Monthly
Coordination Partners Outside CPUC	**Coordination Mechanism**	**Expected Frequency**
Low-Income Weatherization Programs	Project referrals	As requested by contractor/homeowner
Non-SoCalREN Financing Programs	Project referrals, meetings, other regular communication	Quarterly or as needed
Local Workforce Investment Boards	Meetings, other regular communication	Quarterly or as needed
Building Trade Associations	Meetings, other regular communication	As needed as part of marketing efforts
Real Estate Associations	Association meetings, trainings	As needed as part of marketing efforts

[14] "Mechanisms" refers to communication methods (i.e. quarterly meetings; internal list serves; monthly calls, etc.) and/or any cross-program review methods (i.e., feedback on program plans; sign off on policies, etc). or harmonization techniques (i.e. consistent certification requirements across programs, program participant required cross trainings, etc).

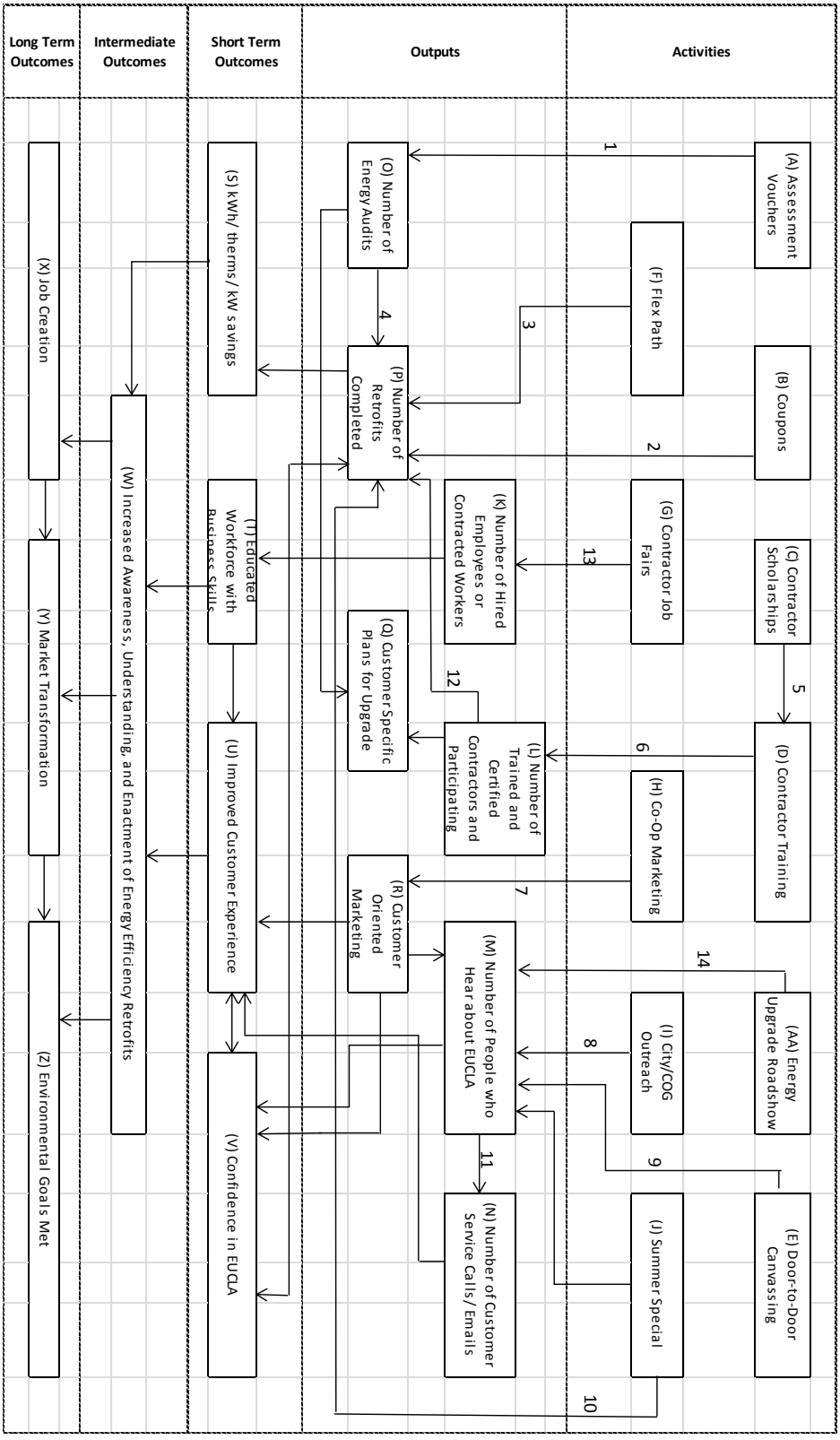
[15] This does not mean there would be mutual understanding of the on the mechanism or a known frequency of coordination; rather, just provide enough information to give a general sense of the coordinate efforts.

Green Building Labeling Organizations	Meetings, other regular communication	As needed as part of marketing efforts
Local Retailers, Suppliers	Meetings, other regular communication	As needed as part of marketing efforts
Community Based Organizations, Religious Institutions, Educational Institutions	Meetings, other regular communication	As needed as part of marketing efforts

o) **Logic Model:** Please append the logic model for this sub-program to the end of this PIP. Describe here any additional underlying theory supporting the sub-program intervention approach, referring as needed to the relevant literature (e.g., past evaluations, best practices documents, journal articles, books, etc.).

Please see below. This logic model is also included as Exhibit A3.

Figure 17 (Subprogram A): Logic Model



11) Additional Sub-Program Information

a) **Advancing Strategic Plan Goals and Objectives**: Describe how sub-program advances the goals, strategies and objectives of the California Long Term Energy Efficiency Strategic Plan (word limit: 150 words)

Figure 18 (Subprogram A): Strategic Plan Alignment

SoCalREN Subprogram A Alignment with CA Long Term Energy Efficiency Strategic Plan		
Residential		
Strategy Number	Strategy	SoCalREN Subprogram A Strategy
1-5	Encourage local, regional, and statewide leadership groups to support pilots and foster communication among pioneering homeowners and builders	SoCalREN will conduct contractor, other building professional, real estate, and other trade outreach to spread brand awareness and facilitate dialogues among industry partners to support the program.
2-2	Promote effective decision-making to create widespread demand for energy efficiency measures	SoCalREN will conduct broad outreach and awareness campaigns to customers and provide support around decision making.
3-2	In coordination with Strategy 2-2 above, develop public awareness of and demand for highly efficient products	See strategy 2-2 above.
DSM Coordination and Integration		
Strategy Number	Strategy	SoCalREN Subprogram A Strategy
1-1	Carry out integrated marketing of DSM opportunities across all customer classes	SoCalREN marketing efforts will be coordinated with IOU Whole House Upgrade Program, Local Government Partnerships, Weatherization Programs, etc. Assessment Voucher will increase opportunities for homeowners to undergo no-commitment BPI audits as a basis to learn about energy saving opportunities.
Marketing, Education and Outreach		
Strategy Number	Strategy	SoCalREN Subprogram A Strategy
1-3	Use social marketing techniques to build awareness and change consumer attitudes and perceptions	SoCalREN marketing campaign will include use of community based organizations, schools, religious institutions and other organizations as drivers of energy efficient behaviors. Campaign will also use online social networking platforms such as Facebook.
1-5	Conduct public communications campaigns, alongside longer-term supporting school education initiatives to deliver the efficiency message	See 2-2 and 1-3 above. SoCalREN will coordinate with BBP Pilots that activate nonprofit organizations as “Energy Champions” to spread energy efficiency message to their constituents.
Local Government Goals		
Strategy Number	Strategy	SoCalREN Subprogram A Strategy
4-4	Develop local projects that integrate energy efficiency, DSM, and water/wastewater end uses	Promote cross-resource DSM offerings and promote green labels (e.g. GreenPoint Rated Existing Home) as well as perform direct installations of water conservation measures.
5-2	Develop model approaches to assist	SoCalREN partners will engage local governments at multiple

	local governments participating in regional coordinated efforts for energy efficiency, DSM, renewables, green buildings, and zoning	levels to support outreach campaigns and ensure local government is aware of SoCalREN and other DSM program offerings.

b) Integration

i. **Integrated/coordinated Demand Side Management**: As applicable, describe how sub-program will promote customer education and sub-program participation across all DSM options. Provide budget information of non-EE sub-programs where applicable.

Through efforts conducted during the ARRA period, SoCalREN partners began to develop relationships with water efficiency and green building programs to help cross-promote services and increase customer awareness of all efficiency options. These efforts will be expanded in the 2013–2014 period, as SoCalREN will continue to identify opportunities to promote indoor and outdoor water efficiency, green product rebates, and other programs to consumers. SoCalREN will also promote green building upgrades, which focus on additional concerns such as indoor air quality and resource conservation, as a viable long-term strategy for increasing property value and occupant health and quality of life.

SoCalREN will promote cross-program services through two efforts. First, the Environmental Information Center (EIC) services offered through SoCalREN will provide an integrated, one-stop service for homeowners to learn about all IOU, local government, water utility, and other DSM offerings. EIC and outreach staff will be well positioned to engage with customers when they are most receptive to hearing about how to improve their home, and will provide them with options for any upgrades they are interested in pursuing. In addition, a significant part of homeowner marketing will be cross promotion efforts by various DSM programs to ensure that, whether through media, collateral, or targeted

outreach, homeowners are made aware of all program options and provided opportunities to participate in all relevant DSM programs.

Table 16 (Subprogram A): Non-EE Sub-Program Information

Non-EE Subprogram	Budget	Rationale and General Approach for Integrating Across Resource Types
Water Programs	TBC	Cross promotion of brand, installation of products (e.g aerators) by EICs
Green Point Rated Existing Home	TBC	Cross promotion of label, incentives offered through BBP pilots

ii. **Integration across resource types** (energy, water, air quality, etc): If sub-program aims to integrate across resources types, please provide rationale and general approach.

Please see above for a description of cross-marketing efforts to be conducted by SoCalREN. In addition to marketing activities, contractor training opportunities will integrate cross-resource consideration and promote awareness amongst building professional of water conservation, air quality, and other consideration and customer offerings.

The Flex Path Incentive Program will include measures associated with non-energy savings, especially those related to indoor water conservation. Points will be awarded to measures including such water efficiency measures as low-flow showerheads, faucet aerators, high efficiency toilets, etc.

c) **Leveraging of Resources**: Please describe if the subprogram will leverage additional investments by market actors or other state, local or federal agencies.

In D 12-05-015, the Commission determined that a key role for local governments was to "Leverage additional state and federal resources so that energy efficiency programs are offered at lower costs to ratepayers." To that end, SoCalREN's Energy Upgrade Subprogram A leverages the following programs:

- Local government ARRA-funded programs (BBP Pilots)
- CPUC/CEC Energy Upgrade California Brand
- SCE/SCG Whole House Upgrade Program
- SCE/SCG Local Government Partnerships and Institutional Partnerships
- Water utility incentives and programs
- Other local government energy and sustainability efforts and campaigns
- Other local government agencies and bureaus, such as building, permitting and inspection departments

d) **Trials/ Pilots:** Please describe any trials or pilot projects planned for this sub-program

e) **Knowledge Transfer:** Describe the strategy that will be used to identify and disseminate best practices and lessons learned from this sub-program

SoCalREN staff and partners will regularly track challenges, lessons learned, and necessary adjustments for all technical, administrative, and marketing aspects of program implementation. These challenges will be transmitted to local government partners operating similar programs through regular meetings of the SoCalREN Governance Committee with local government forums (such as LGSEC, Local Government Commission), regional and institutional partners (e.g., Councils of Government, local government partnership program) and through program updates provided to Commission and program partners.

12) **Market Transformation Information**: For programs identified as market transformation programs, include the following (suggested page limit- five pages):

Market Transformation Objectives

The market transformation objectives of the SoCalREN Energy Upgrade Program are the following:

- Increased general knowledge and awareness amongst homeowners of energy efficiency and green upgrade practices and benefits, and encourage a long-term transition towards energy efficient behaviors and purchases;
- High awareness of energy efficiency and green upgrades among relevant professional industries, including real estate, building trades, manufacturing/supply, and other industries;
- Streamlined coordination of DSM programs across IOUs, local governments, and other organizations;
- Development of a skilled and motivated professional building workforce that makes energy efficient and green upgrade best practices standard practice in service delivery.

Market Description

Market actors include:

- **Building Performance Contractors** — Deliver Energy Upgrades to Residential Property Owners, Participating Contractors in Energy Upgrade California
- **General Contractors** — Oversee delivery of residential remodels, other installation work; May perform direct installation or subcontract to specialty contractors May or may not be associated with whole house performance upgrades and Energy Upgrade California
- **Specialty Contractors** — Have specialty license in HVAC, Insulation and deliver installation. May also perform whole house and general contracting duties. May or may not be associated with whole house performance upgrades and Energy Upgrade California
- **Green Building Professionals** — Building professionals, including general and specialty contractors, who are trained in delivering or assessing technical work that incorporates additional green building concerns beyond energy efficiency, such as outdoor water efficiency, indoor air quality, resource conservation, and low-impact development/site water management. Serve as private contractors or on behalf of green building rating and incentive programs.
- **Single-Family Residential Property Owners**

- **IOUs** — Run energy efficiency incentive programs, such as Energy Upgrade California. Conduct contractor management, quality assurance, program administration for Energy Upgrade California.
- **Local Governments** — Set greenhouse gas emissions, energy savings, and other sustainability goals and implement programs to meet those goals. Support IOU energy efficiency programs through professional and customer outreach, coordination amongst local actors, enforcement of code. Pilot energy efficiency programs.
- **Other Energy Efficiency Programs** — IOU third party and local government partnership programs that implement direct install, weatherization, and other incentive programs.
- **Workforce Training Organizations** — Community colleges, professional training organizations, workforce investment boards, and nonprofit programs that provide job training and placement services for new professionals.
- **Non-Energy Efficiency and Conservation Programs** — Water utility, local government, green building, and other programs that promote and incent resource conservation, air quality, green products, and other non-energy efficiency efforts.
- **Other Relevant Professional Trades** — This includes all professional industries and associations that may affect property owner and building professional choices, including real estate professionals, product manufacturers and suppliers. These actors affect behavior of their clients through the services they offer and products they provide.

Market Characterization and Assessment

Many of the market barriers associated with the single-family energy efficiency and whole house markets are described above in the Subprogram Description and Theory. The following market characterization and assessment is adapted from the analysis in the *Recommendations for Energy Upgrade California in the Bay Area* report which can applied statewide to address Southern California's need as well.

i. Homeowner Awareness and Behavior

While the Energy Upgrade California website and local marketing campaigns have achieved an initial measure of homeowner education, most homeowners are not aware of how their homes work or the economic and environmental benefits of energy efficiency. Building broader awareness and deeper knowledge will be a key to future program implementation and market transformation.

Homeowners vary in their motivations for undertaking energy efficiency work in their homes, including saving money, increasing comfort and health, and protecting the environment (among others). Given this, as well as demographic, geographic, economic, and ethnic diversity in the SoCal region, there is no one single marketing approach that will reach or resonate with everyone. There is a need to market to different segments with different strategies — social media, print, radio, TV, tabling events, workshops, etc. Such multi-faceted marketing should be employed in future programs. Additionally, marketing and outreach are inherently local, and marketing success in generating leads must leverage the character of a community, local events, and trusted messengers.

Currently, most marketing efforts for single-family energy upgrade programs are relatively uncoordinated, with IOUs providing limited direct marketing and Participating Contractors varying significantly in their messaging and focus, as well as the veracity of their information regarding program options and incentives. Additionally, awareness amongst other industry actors is relatively low, and energy efficiency considerations have not yet entered into standard business practice for any relevant market actors.

Additionally, market barriers as described in the Subprogram Description and Theory, including high cost, lack of adequate financing, program complexity, and customer distrust of

the contracting community, have dissuaded many interested customers from participating in Energy Upgrade California, and, as of yet, no simple coordinated solution has been provided to address many of these barriers.

ii. Professional Industry Awareness

Successful program implementation depends on a robust partnership between program administrators (IOUs or local governments) and those working in the industries related to those programs. Through the services these industries provide, they have a dramatic effect on homeowner and professional valuation of energy efficiency products and services. In D 12-05-015, the Commission directed the IOUs to take a strong role in engaging industry partners, especially those in the real estate industry. Local governments have been performing this work for several years, and stand poised to continue strengthening connections in these industries in partnership with the IOUs.

In 2011-2012, SoCalREN partners conducted concerted effort to make inroads into the real estate sector, and, to a lesser extent, the supplier market. Through the ARRA period, SoCalREN partners have engaged these actors, developed and delivered trainings for realtors, discussed approaches towards listing and valuation of energy efficient and green-labeled homes, coordinated on strategic marketing approaches with local retailers, and developed pilot approaches towards securing reduced costs for energy efficient and green products for Participating Contractors.

All of this work has created inroads into industries vital towards long-term market transformation. That said, energy efficiency and green upgrades are still tangential considerations by most professionals in these industries, and are not yet part of the central

message conveyed to customers and clients. In order to ensure that opportunities created within the last few years are not lost, local governments and IOUs must continue outreach and engagement, and develop models and messages that serve the core needs of these industries while promoting energy efficiency and other cross-resource conservation options. Through the Energy Upgrade Program, SoCalREN partners will continue to engage these actors through cross-promotion and marketing efforts so energy efficiency can be a core consideration of these actors.

iii. Coordination of DSM Programs

Similarly, the ARRA period dramatically expanded the role of local governments within energy efficiency, and provided an unprecedented opportunity for collaboration and streamlining between local government actors, IOUs and third-party program providers (third-party providers, water utilities, nonprofit advocates, etc.). The ARRA period was successful in more firmly establishing relationships between these actors, and led to some successes in collaboration and streamlining between actors, most notably through the use of a common program brand and statewide website.

That said, the ARRA period also demonstrated the significant challenges associated with coordination among large bureaucracies, and the confusion that this many actors can have in the marketplace. Notable examples include the coordination of marketing and outreach messages, coordination of incentive program offerings and messaging around those offerings, and sharing of program data amongst organizations for program evaluation. It is clear that continued coordination, and the long-term development of governance structures

that can effectively manage such issues, is required to for the market to mature and effectively penetrate into professional and customer awareness.

iv. Professional Building Workforce

As the market has developed, it has become clear that, to successfully penetrate the market, Energy Upgrade California needs to provide a distinct advantage to the building industry professionals over business as usual. In its current program design, Energy Upgrade California fails to provide the convincing argument for professionals to provide energy efficiency services and develop the systems necessary to work with Energy Upgrade California. With this fundamental challenge, the efforts to recruit, train, and place new professionals have been impaired.

Energy Upgrade California's failure to provide a strong business case to building professionals has significant impacts that go beyond the success of the program. As identified by UC Berkeley in 2011[16], proper incentive program design is a key to increasing the overall quality of any installation in the residential sector (especially HVAC installations) and shifting the "low-road" environment of residential energy efficiency to one that values the quality of installations. In the energy efficiency sector, since the quality of installations affects the energy use of a building, it becomes vital to the long-term mission of the Commission to ensure that Energy Upgrade California and other incentive programs provide are attractive to residential building professionals.

---

16 Zabin, C, et. al. California Workforce Education & Training Needs Assessment For Energy Efficiency, Distributed Generation, and Demand Response. Donald Vial Center on Employment in the Green Economy, Institute for Research on Labor and Employment, University of California, Berkeley. 2011.

To increase the business proposition of Energy Upgrade California, program implementers need to remove the market barriers that stand in the way of market penetration. This would include such coordinated actions as a re-evaluation of the program design and introduction of accessible upgrade packages, more effective marketing, strong consumer advocacy and support, targeted contractor support, introduction of viable financing mechanisms and reduction of other cost and process barriers.

If implementers are able to remove these barriers successfully in the coming years, then consumer demand will create a demand for qualified and trained professionals, which can be filled by trainers and other workforce actors, working alongside program implementers.

Proposed Interventions

Proposed interventions have been described throughout this program description. Along with Financing (Subprogram B), all proposed interventions are focused on reducing the technical, cost, and process barriers toward making Energy Upgrade California a successful program. A summary is provided in the table below.

Figure 19 (Subprogram A): Market Transformation Barriers and Interventions

Barrier	Proposed Intervention
Program design barriers-Required audit, program complexity	Assessment incentives, Flex Path incentive, Environmental Centers
Program cost barriers	Assessment incentives, Flex Path incentive, Financing (Subprogram B)
Lack of customer awareness	Broad and targeted marketing campaign, contractor sales training,
Lack of professional/industry awareness	Professional outreach as part of marketing campaign
Contractor skills gap	Contractor sales, administrative, installation and other technical trainings; Environmental Centers to support contractor sales

Market Transformation Indicators (MTIs) and Evaluation Plans

Resolution E-485 (December 2, 2010) Appendix B, lists adopted Market Transformation Indicators for the 2010-2012 Energy Efficiency Portfolio, which were then amended by Energy Division in 2011 at the direction of the Commission. To ensure consistency with adopted Market Transformation Indicators and Program Evaluation strategies, SoCalREN proposes the following Market Transformation Indicators, based upon the proposed amended Whole House Upgrade Program and IDSM MTIs proposed by Energy Division in 2011:

- Whole-House MTI 1: Costs to customers of whole house upgrades, including costs of materials, equipment, and labor. Metric Type 3.
- Whole House MTI 2: The proportion of households that elect to perform comprehensive energy upgrades. Metric Type 3.
- Whole House MTI 3: The number of IOU customer households that undergo a deep upgrade (Advanced and/or IDSM) audit through IOU programs. Metric Type 3.
- IDSM MTI 2a: Percent of customers in the residential sector who have received an integrated audit.
- IDSM MTI 2b: Percent of integrated audit customers who have adopted one or more audit recommendations.
- IDSM MTI 3: Percent of customers in each customer classes who are aware of integrated programs or incentive opportunities.
- IDSM MTI 5: Water conservation, GHG, and waste reduction strategies are incorporated into integrated program offerings.

Program evaluation will be conducted in coordination with EM&V activities conducted on behalf of the Commission and IOUs. SoCalREN partners will participate as possible in all data collection and interpretation activities, as directed by the Commission.

13) **Additional information as required by Commission decision or ruling or as needed:** Include here additional information as required by Commission decision or ruling (As applicable. Indicate decision or ruling and page numbers):

Exhibit A1: Tables

Exhibit A2: EUC marketing collateral

Exhibit A3: Logic Model

Exhibit A4: EUC E3 calculations – Due to file size, please download at:

https://drive.google.com/folderview?id=0B-geqhnadhYHLUR6dEVMRVZMVkE&usp=sharing

This page left intentionally blank.

2013-2014 Energy Efficiency Programs
Southern California Regional Energy Network
Program Implementation Plan

1) **Sub-Program Name:**

Sub-Program B: Develop and Launch Regional Public Agency Led Financing Programs for Energy Projects in Public, Commercial and Residential Buildings

2) **Sub-Program ID number: _____**
3) **Type of Sub-Program: __Core _X_Third Party __Partnership**
4) **Market sector or segment that this sub-program is designed to serve[17]:**
   a. _X_ Residential
      i. Including Low Income? _X_ Yes __ No;
      ii. Including Moderate Income? _X_ Yes __ No.
      iii. Including or specifically Multifamily buildings _X_ Yes __ No.
      iv. Including or specifically Rental units? _X_ Yes __ No.
   b. _X_ Commercial (List applicable NAIC codes: __All commercial NAIC codes__)
   c. _X_ Industrial (List applicable NAIC codes: __All industrial NAIC codes_____)
   d. __ Agricultural (List applicable NAIC codes: _____)

5) **Is this sub-program primarily a:**

   a. Non-resource program ___ Yes_X_ No
   b. Resource acquisition program _X__ Yes __ No
   c. Market Transformation Program ___ Yes _X_ No

6) **Indicate the primary intervention strategies:**

   a. Upstream ___ Yes _X_ No
   b. Midstream ___ Yes _X_ No
   c. Downstream _X_ Yes ___ No
   d. Direct Install __ Yes _X_ No.
   e. Non Resource __ Yes _X_ No.

[17] Check all that apply

7) Projected Sub-program Total Resource Cost (TRC) and Program Administrator Cost (PAC)

ELECTRIC: TRC: 0.92 PAC: 2.06
GAS: TRC: 1.13 PAC: 1.45

8) Projected Sub-Program Budget

Table 1 - Electric (Subprogram B): Projected Sub-Program Budget, by Calendar Year[18]

	Program Year		
Sub-Program B: Financing	**2013**	**2014**	**Total**
Admin ($)	172,564	172,564	345,128
General overhead ($)	0	0	0
Incentives ($)	0	0	0
Direct Install Non-Incentives ($) *	2,651,905	2,651,905	5,303,810
Marketing & Outreach ($)	174,906	174,906179	349,812
Education & Training	0	0	0
Total Budget	**2,999,375**	**2,999,375**	**5,998,750**

[18] Individual utility specific information to be provided in this table

Table 1 - Gas (Subprogram B): Projected Sub-Program Budget, by Calendar Year[19]

	Program Year		
Sub-Program B: Financing	**2013**	**2014**	**Total**
Admin ($)	30,511	30,511	61,021
General overhead ($)	0	0	0
Incentives ($)	0	0	0
Direct Install Non-Incentives ($) *	468,496	468,496	936,993
Marketing & Outreach ($)	30,868	30,868	61,736
Education & Training	0	0	0
Total Budget	**529,875**	**529,875**	**1,059,750**

Table 1 - Combined (Subprogram B): Projected Sub-Program Budget, by Calendar Year[20]

	Program Year		
Sub-Program B: Financing	**2013**	**2014**	**Total**
Admin ($)	203,074	203,074	406,149
General overhead ($)	0	0	0
Incentives ($)	0	0	0

[19] Individual utility specific information to be provided in this table

[20] Individual utility specific information to be provided in this table

Direct Install Non-Incentives ($) *	3,120,401	3,120,401	6,240,803
Marketing & Outreach ($)	205,774	205,774	411,548
Education & Training	0	0	0
Total Budget	**3,529,250**	**3,529,250**	**7,058,500**

***** SoCalREN defines Direct Install Non-Incentives (DINI) as Direct Implementation activities.

9) Sub-Program Description, Objectives and Theory

a) **Sub-Program Description and Theory:**

B1: Establish and administer a regional public building loan loss reserve program - $200,000

Introduction

Local governments play a critical role in furthering the State's energy efficiency goals by addressing barriers within its own sector as well as those of its constituents. Significant progress has been made in retrofitting municipal facilities and infrastructure due in large part to the 2009 American Recovery and Reinvestment Act (ARRA). The successes and lessons learned from these projects have created a strong foundation and momentum from which local governments can build upon to pursue additional energy efficiency projects. Many opportunities remain for local government and public agencies to invest in energy efficiency.

Purpose

The Public Building Loan Loss Reserve Plan Program (PB LLR) description provides detail on PB LLR's activities, goals, timelines, and deliverables. In addition, this description provides baseline metrics and methods to measure progress and key milestones during the 2013-2014 Transition Period. In the original

PIP, SoCalREN proposed a loan loss reserve for public buildings as part of the program design. Pursuant to D.12-11-015, this final PIP no longer includes this element which was not approved, but does include the marketing and financial analysis of financing mechanisms available to public agencies through a Master Lease which was established with ARRA funding during a pilot period. This program offers public agencies customized technical assistance to obtain financing through a private equity lender. There is no accompanying debt service reserve.

Background

In 2005, SCE funded a comprehensive effort to assess barriers to public agency participation in energy efficiency programs. The effort produced the report titled "Public Agency Participation in Energy Efficiency Programs: Technology Transfer Feasibility Study Prepared for the Southern California Edison – Southern California Gas – County of Los Angeles Energy Efficiency Partnership (December 2, 2005)." The report included the following findings:

- There is a lack of understanding on the part of public agencies about how various energy programs operate and how to best access those programs;
- A majority of public agencies lack sufficient staff resources to actually design and implement energy programs and projects.

In addition, the 2012 SoCalREC pilot program also found that:

- There is limited availability, or understanding, of "turn-key' financing mechanisms. Specifically, the need for financing that follows a standardized underwriting protocol; offers competitive interest rates attractive to cost-conscious jurisdictions; and provides adequate information for agencies to make investments decisions regarding energy efficiency, all with the goal of reducing overall operating costs.

The SoCalREC program was created, in part, to overcome these barriers by offering energy management services at no cost to public agencies. During SCE's Flight 5.6 Strategic Plan period of performance which ran in concert with SCE/SCG's ARRA Continuation Contract, the SoCalREC team

provided marketing and outreach to public agencies, explored financing mechanisms, and ultimately, developed an energy efficiency public financing method.

SoCalREC started by exploring financing models that would be attractive to public agencies based on their cost-effectiveness, streamlined lending processes, and ease of implementation. This resulted in the establishment of the SoCalREC Master Lease financing program that provided options to finance energy efficiency, water efficiency, and renewable projects in Southern California. The Master Lease loan product is a method for financing energy efficiency projects with no impact on a city's General Fund. Princeton Credit was selected as the approved lender to offer loans to public agencies using a standard application process with the determination of interest rates based on the credit rating of the agency and the Treasury Bond index at the time of funding.

Next, SoCalREC created marketing materials that explained the differentiating features of the SoCalREC Master Lease financial product from other existing options such as the Investor-Owned Utilities' (IOU) On-Bill Financing, the available California Energy Commission (CEC) loans, or the use of private equity through energy service companies (ESCO). In addition to providing online resources (www.socalrec.com) and in anticipation of specific questions and concerns, SoCalREC developed decision trees that illustrate a step-by-step guide to the loan process, customized for a local government audience. This tool, along with the side-by-side loan comparisons, is intended to outline to local governments in clear terms how the SoCalREC Master Lease product works to finance energy efficiency with no upfront costs or impact to a city's general fund.

Lastly, SoCalREC offered assistance in the application and qualification process for the Master Lease financing program which further incentivizes municipalities and special districts to take advantage of available products and implement their energy efficiency projects. By providing centralized project management and technical assistance along with Master Lease financing, SoCalREC will realize efficiencies

in project implementation by the public agencies, resulting in more pipeline projects transformed into completed projects.

Objectives

The objective of the Public Agency Loan Loss Reserve program is to market the Master Lease Finance Program and to help qualify energy efficiency projects. The goal is to help public agencies to secure at least 15 loans through the SoCalREC Master Lease Finance Program during the 2013-2014 funding cycle. SoCalREC will also use the Public Agency Loan Loss Reserve program to help accelerate financing for projects already in the Master Lease program pipeline from the previous funding cycle.

At the close of the 2013–2014 Transition Period, SoCalREC will measure the impact of the PB LLR on the marketplace by answering the following questions:

1) From what programs or efforts did the majority of loans originate?
2) Did the marketing of financing, as part of a portfolio of services, help public agency decision makers to move toward implementation of their projects?
3) Did this financing program fund projects that would not have otherwise been completed?

Program Partners known when PIP was filed

During the 2012 SoCalREC pilot period, the Master Lease program was managed by Los Angeles County through a contract with The Energy Coalition. Other Program Partners included:

- Public Financial Management (PFM). Senior Managing Consultant, Laura Franke, and her team managed the selection of the lender, Princeton Credit, and provided oversight of the screening of eligible projects, the development of loan terms and conditions, and the standardized underwriting criteria, all under the ARRA Continuation Contract with SCE/SCG. PFM has provided financing expertise for local governments and other public agencies since 1975.
- Princeton Credit. CEO, Gordon Lee, met the eligibility criteria and became the Master Lease broker through its response to the SoCalREC solicitation. Princeton Credit will work closely with the

SoCalREC team in the qualification of projects for financing. Projects will require participation in the SoCalREC program as a pre-requisite for financing. Equipment installed will serve as primary security (collateral) until the lease is paid in full. In some cases, where the equipment cost is minimal and labor costs are greater, e.g. retrocommissioning, additional security may be required (for instance, the site or structure for the improvements).

Activities

Program Activities will be divided into two categories:

1) Marketing and Outreach of the Master Lease Financing program
2) Direct Implementation of the Master Lease Financing Program and Loan Application Process

Marketing Master Lease Financing Program

Pursuant to the Final Decision, this scope of work is primarily an outreach program. The marketing activities in this program are intended to generate enrollment in the Master Lease financing program. These types of activities include:

- Collateral development, creative design, and distribution
- Presentations to stakeholders on Master Lease financing
- Flyers and tools designed to help viewers understand the Master Lease financing program against other financing options
- Website presence.

Direct Implementation of the Master Lease Financing Program

Direct Implementation of the Master Lease Financing will be included in SoCalREN's overall marketing and outreach campaign. Additionally, meetings will be held with the IOU Local Government Partnership

representatives and Business Customer Division Account Managers in order to coordinate and leverage all existing relationships with local government clients.

For all projects more than $250,000 in projected construction costs, SoCalREC's Direct Implementation of the Master Lease program to public agencies through five distinct strategies:

1) Explain how Master Lease Financing is a viable strategy to fund existing shovel-ready energy efficiency projects.
2) Demonstrate how public agencies can bundle a variety of projects within one consolidated loan.
3) Introduce Master Lease Financing as one of many SoCalREC benefits, including available assistance, to help public agencies complete energy efficiency projects.
4) Emphasize program advantage to use the public agency's forecasted energy savings to use "project savings capacity" and realize positive cash flow after project implementation.
5) Administration of loan application assistance for public agencies who request financing.

1. Master Lease Financing eliminates the barrier for many public agencies in funding an energy efficiency project since the Master Lease lenders do not require a cash-flow positive formula in order to fund a lease. However, SoCalREC would prefer to identify and promote cash-flow positive projects since they demonstrate how energy savings can produce a positive return on investment from the use of general funds. In addition to paying off the loan payments through the energy savings through the life of the loan, SoCalREC will work with agencies to use rebate incentives and the forecasted surplus as potential seed money for a revolving loan fund within their jurisdiction. Additional information regarding the revolving loan fund can be found in the Public Agency Revolving Loan Fund sub-program description.

2. Bundling projects into one consolidated loan reduces lending fees and optimizes the return on investment through the efficiencies realized from increased economies of scale. Through the Master Lease program, public agencies can reduce their risk and maximize their financial and resource investment. SoCalREC will continue to work with cities and other public agencies to aggregate projects by using

combined energy savings to repay the debt, and to identify any potential cash surplus. This combining of projects will ideally provide overall savings adequate to fund a much-needed project, even if one single project has a less attractive return on investment.

3. The third activity is based on the use of financing as a conversation starter with agencies to promote the Master Lease Program. Using marketing materials created to promote the Master Lease financing, will enable SoCalREC to introduce a financing option that will potentially increase the potential for project implementation. Examples of items already created through prior U.S. Department of Energy (DOE) funding, can be found at www.socalrec.com (Financing tab). Public agencies interested in learning more about the Master Lease program, by default will also learn about SoCalREC's services, and potentially lead to the development of new projects.

4. SoCalREC will offer services required to quantify the projected energy savings according to standard protocols and coordinate with the appropriate utility rebate and incentive programs. The "Project Savings Capacity" is best understood by illustration of the loan options for a public agency through the Master Lease program. The projected energy savings over the life of the project multiplied against the loan's interest rate will determine the maximum amount that could be borrowed. For example, if a retrofit has a one-year payback period, the period of time required for the return on an investment to "repay" the borrowed sum, and if an agency takes out a loan, repayable in one year's time, then, in this scenario, all of the energy savings would be applied to paying back the debt, leaving no financial surplus.

In a "Project Savings Capacity" scenario, the energy savings create a cash flow surplus that can be set aside or used for other projects. For example, if a lighting retrofit has a five-year equipment life, then the projected energy savings over the life of the equipment determines the maximum amount an agency could afford to "pay back", regardless of the energy savings payback period (e.g., one-year). Therefore, if the agency took out a five-year loan (matching the equipment lifecycle) the agency's cash flow benefit is based

on the projected energy savings minus the cost of the retrofit. This surplus could be used in other energy efficiency projects including the replacement of equipment that doesn't have positive cash-flow, such as series lighting, or a boiler replacement, etc. A "Project Savings Capacity" scenario allows the General Fund budget to remain static through the entire loan term, while utilizing the surplus energy savings to implement additional energy efficiency projects (potentially without having to take out additional loans).

5. SoCalREC will be responsible for overall administration of the loan application process, including the management of the program finance partners. As part of the implementation services, SoCalREC will be the primary point of contact for the public agency client so as to provide seamless project management and efficient communication of the lending process.

When an application is submitted through a non-SoCalREC source, SoCalREC will perform the same quality control procedures as applied to SoCalREC-sourced applications. This includes following a defined protocol for review of any technical data, energy savings calculations, and cash flow impacts. No project will be financed without SoCalREC's review and approval of the energy savings and project scope of work.

Deliverables and Timeline

Deliverables for this program will be centered around identifying whether a not a project is moving forward with implementation due to the existence of the Master Lease financing option. The projects will be tracked as part of the SoCalREC tracking mechanism. The SoCalREC tracking tool will include information about project types, scopes of work, energy savings, and rebates applied for. SoCalREC projects which obtain financing through the Master Lease program will also include information about the loan itself including loan amount, repayment terms, interest rate, and non-rebated measures financed.

Other deliverables and their timelines are included in the table below:

Deliverable	Budget/Timeline
1. Marketing	**$8,000**
Promote website content about Master Lease financing	Existing
Develop contact database	Ongoing
E-blast promoting Master Lease financing	Q1, 2013 revised and Sent out twice a year
Collateral material promoting the Master Lease financing	Q1, 2013
Develop SoCalREC tracking tool	Q2, 2013
2. Direct Implementation	**$147,964**
Develop loan application form	Existing
Develop financing tracking mechanism within tracking tool	Q2, 2013
New materials for revised REN website	Q4, 2013
Transfer information to REN website	Q4, 2013
3. Reporting	
Quarterly reports on loan activity	Q2, Q3, Q4, 2013 Q1, Q2, Q3, 2014
Yearly report on loan activity, progress, and program design assessment	Q4 2013
Final report for program cycle	Q4, 2014

Financing Goals

Projected Loan enrollment targets:

The goal is to provide administrative and marketing and outreach support that results in the following:

- 15 loans over $250,000 each completing their application.
- 5 loans over $250,000 each in the pipeline for 2015.

Loan enrollment targets: 15 closed, 5 in pipeline

Year	# of loans	Projected loan amounts	Projected Energy Savings
2013	7	Up to $1,750,000	Up to 1.5 million kWh Up to 37,000 therms
2014	8	Up to $2,000,000	Up to 1.7 million kWh

			Up to 42,000 therms
2015 (in pipeline)	5	Up to $1,250,000	Up to 1.1 million kWh Up to 26,000 therms

The funding associated with this financing program is for administrative and marketing and outreach support for a Public Agency Loan Loss Reserve. LA County's SoCalREC Master Lease Financing loan program for Public Agencies uses private capital and standard underwriting criteria. SoCalREC has gathered feedback from local governments that this type of financial product would be helpful in completing their implementation of energy efficiency projects. A year-end assessment will be made to determine if program design modifications, if any, are necessary, in which case SoCalREN will revise the deliverables, goals, and milestones for review and approval.

Metrics

The following table demonstrates the methods for evaluation and measurement as well as the process for tracking the metrics listed

Metric	Data collected
Marketing	# of attendees at workshops, # of e-blasts distributed, click-through rates on email marketing pieces, # of hits to webpages
Direct Implementation	# of public agency informational meetings about financing; # of public agencies for which technical assistance was provided
Project financing initiated	# of Master Lease Financing options initiated
Pipeline projects	# of applications for financing pending at end of 2014

Budget Category	Allowable Expenses
Admin & Overhead	Admin labor, mileage and travel
Direct Implementation	DI labor, Lender fees, closing costs, bond counsel,
Marketing and Outreach	Collateral printing, creative design, web design, conferences, travel

Training and Education	Outreach labor and costs including trade show fees, exhibit costs, signage, etc

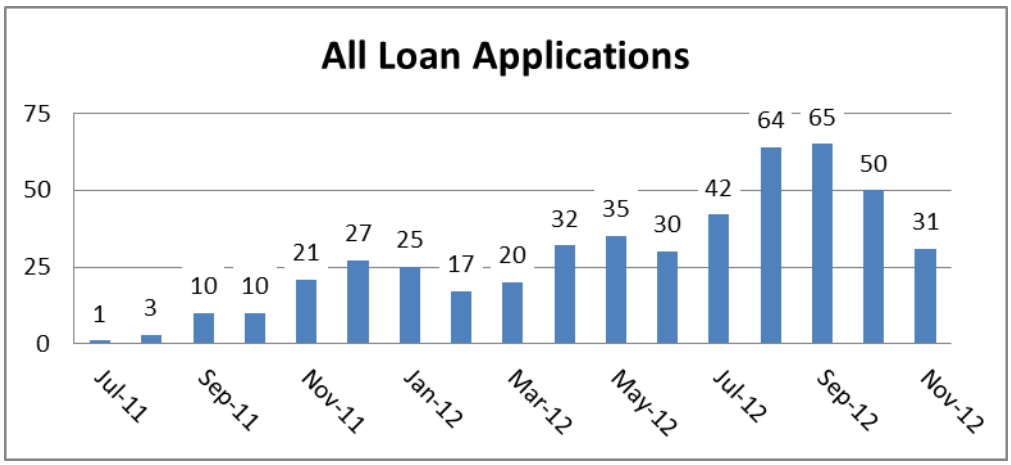
B2: Continuation and expansion of a residential loan loss reserve program in support of Energy Upgrade California projects. - $3,475,000

In July 2011, Los Angeles County entered into a contract with Matadors Credit Union ("Matadors") in which a loan loss reserve (LLR) was created using ARRA funds to provide credit enhancements for loans financing EUC retrofits and CSI qualifying renewable energy systems. The LLR provides 90% default coverage for each qualifying loan, thereby lowering the interest rates on the loan product since the default risk is mitigated. Without the LLR, the interest rate for an unsecured loan is approximately 360 basis points higher.

The $3.475M in funds designated by the CPUC will enable the LA County energy loan program to be expanded throughout the Southern California region (excluding the Tri-County area) and will facilitate private sector financing for approximately 2,300 energy-related loans worth approximately $27M. As per the Application decision, these loans would be available for EUC Advanced and Flex Path/Enhanced Basic Path projects. Appropriate restrictions will apply in municipal territories served only by SoCal Edison or only by SoCal Gas and to projects that include renewables such as solar PV or thermal. With LA County's access to additional LLR funds from the California Energy Commission ("CEC"), the SoCal REN can ensure the single family financing program has continuity and flexibility throughout the region.

Figure 20 depicts statistics to date on EUC loans in LA County, include demand, count, total loan value, and average terms as of November 2012, and demonstrates the type of data and metrics collected for the program.

Figure 20 (Subprogram B): Statistics to date on EUC Loans in LA County



EUCLA Loan Summary

	Count of Applications	Total Loan Value
Funded Loans	191	$2,723,135.76
Approved Loans	60	$660,597.72
Total	251	$3,383,733.48

	Count of Applications	Average Interest Rate	Average Terms (months)	Average Monthly Payment	Average Loan Application
2% Loans	300	2.00%	60	$272.99	$15,560.70
Other Loans	7	8.42%	103	$196.65	$12,399.87
Defaulted Loans	1	6.99%	60	$342.00	$17,148.00

Financing Product Details

The following is an overview of the financing product and qualifying criteria for the EUC residential loan loss reserve program.

Property Owner Eligibility

- Must have a 660 minimum FICO score and meet other credit criteria.

- Cannot have declared bankruptcy in the last 7 years or had a mortgage delinquency of more than 30 days over the last two years.

Property Eligibility

- Property must be served by Southern California Edison (SCE) and Southern California Gas Company (SoCalGas) excluding the Tri-County area of Santa Barbara, San Luis Obispo and Ventura.*
- Property must be an owner-occupied, single-family detached residence.

** Ratepayer energy efficiency portfolio funds will not be used in territories served by municipal territories.*

Project Eligibility

- Energy efficiency projects must be enrolled in <u>one</u> of the following incentive programs:
    - SoCal REN Flex Path incentive program
    - Energy Upgrade California utility incentive program through Southern California Edison (SCE) and/or Southern California Gas Company (SoCalGas)
- Solar projects must be enrolled in the California Solar Initiative (CSI)*
    - Solar projects must be installed concurrently or after the installation of energy efficiency measures.

**Ratepayer energy efficiency portfolio funds will not be used to provide LLR on solar projects.*

Financing Terms

- **Types of Upgrades:** Energy efficiency and solar
- **Types of Energy Loans:** Unsecured (may require a UCC-1 lien).
- **Financing Amounts:** $2,500 - $50,000

Interest Rate Table

Fixed Interest Rate	**4.99%**	**5.99%**	**6.99%**
Term (Years)	5	10	15

Sample Loan	$10,000	$10,000	$10,000
Sample Monthly Payment	$188.67	$110.97	$89.93

Other

- No prepayment penalties or closing costs.
- Loan value may equal full amount of qualifying scope of work (not including rebates and incentives).
- Based on the proposed scope of work, additional review by the Energy Commission Cultural Resources office may be required. Such review would require additional documentation and may cause delays in loan approval.

Partners

Participating Lenders

At the time of this PIP filing, Matadors is the only participating lender.

Program Partners

The following parties will responsible for managing and implementing this program.

Party	Role	Core Responsibilities
Los Angeles County	SoCal REN Lead	Responsible for liaising with utilities regarding contracts and leading the SoCal REN team
Renewable Funding, LLC	Program Administrator	Responsible for working with all parties to ensure smooth operation of the residential loan loss reserve program by performing administration and development work required to adequately support and expand the current program including LLRF management, exception review, audit of loans and monthly reports showing overall loan activity

		and spend of the LLRF.
Bevilacqua-Knight Inc.	Contract Manager and Marketing, Education, & Outreach	Responsible for managing contracts, scopes of work and budget of all parties including invoicing and reporting to the SoCal REN. Also handles the consumer and contractor outreach regarding the residential loan loss reserve program.

Deliverables and Timeline

Since the SoCal REN residential loan loss reserve program is already operating in LA County, the activities required to expand the program geographically or by project scope is relatively limited in nature. The following outlines the core steps necessary to expand the program.

Tasks	Date
Update LLR agreements and terms for expanded territory and/or project scope	Q1 2013
Update materials and website to reflect changes	Q1 2013
Update processes for managing the respective LLRFs	Q1 2013
Launch energy loan program in expanded territory	Q1 2013
Marketing and outreach targeted to homeowners	Ongoing
Outreach and training to Participating Contractors	Ongoing
Regular administration including communicating with lender and relevant parties regarding program changes and loan exceptions, modifications, defaults, etc.	Ongoing
Review and provide monthly reports to appropriate stakeholders	Ongoing

Below is more detailed regarding tasks required for on-going administration and reporting. Typical administration and support of existing financing program with lender includes:

- Manage LLR
- Program management
- Liaise with stakeholders
- Review exceptions, modification, and default claims
- Update the program processes and requirements as needed
- Update program materials and EUC website as needed (includes web content, application packet, etc.)
- Evaluate and execute any changes to the program terms as needed
- Communicate program changes to Matadors
- Support communications to contractors and broader public
- Manage call center to answer questions related to the financing program
- Support SHPO process
- Develop and implement additional trainings or tools to assist contractors with utilizing financing, as appropriate

Typical tasks required of regular reporting include:

- Review monthly report, closed loan documentation, and account statements from lender
- Maintain file of all closing documents
- Provide monthly report with number of applications received, number of closed loans, and spend of the LLRF

Proposed Budget

Please see Exhibit E for budget detail.

Financing Goals

The following details the programs financing goals: 2,307 loans of $2.768 M.

	Number of loans*	Total LLR Reserved	Total Loan Volume
Q1 2013	187	$224,804	$2,248,042
Q2 2013	267	$320,060	$3,200,602
Q3 2013	267	$320,060	$3,200,602
Q4 2013	267	$320,060	$3,200,602
Q1 2014	316	$379,119	$3,791,189
Q2 2014	329	$394,995	$3,949,949
Q3 2014	337	$404,838	$4,048,380
Q4 2014	337	$404,838	$4,048,380
Total	**2307**	**$2,768,774**	**$27,687,744**

* Projections based on financing Flex Path, Enhanced Basic, and Advanced loans.

B3: Establish a multi-family building energy upgrade financing loan loss reserve program - $1,500,000

LA County launched a multi-family (MF) EUC retrofit pilot in August 2011. It encourages a whole building approach to multifamily building upgrades by providing technical assistance and incentives to building owners who undertake deep energy efficiency retrofits. The County has already launched a marketing and outreach campaign and has received applications covering over 1,000 MF units. The County proposes to develop a financing program for MF projects that can utilize LLR funds in two ways.

PACE Option: The County can offer PACE financing for larger MF projects that are not associated with FNMA or FMAC financing using the existing, non-residential PACE program once this LLR is established. The existing MF retrofit program will be leveraged to reach out to interested qualified MF property owners. This will be limited to larger MF projects for which PACE is more attractive.

Non-PACE Option (Proposed): For smaller MF projects, the County can assist MF property owners in finding private financing which can utilize the same LLR fund. The County proposes to solicit financial

institutions interested in MF financing. The LLR account managed by the County can be used for these transactions.

These program funds will be used for credit enhancement, further program development and program administration.

B4: Promotion and administration for already established non-residential PACE program - $1,411,500

Purpose

The PACE Implementation Plan (Plan), designed to complement the Southern California Regional Energy Network (SoCalREN) Program Implementation Plan (PIP) submission, is intended to provide greater detail into PACE Financing program activities, goals, timelines, and deliverables. In addition, the Plan provides baseline metrics and methods to measure progress and key milestones during the 2013-14 Program pilot lifecycle.

Background

The Property Assessed Clean Energy (PACE) Financing Program was designed to offer low-cost, no money down financing to commercial, industrial and multi-family property owners within Los Angeles County to fund energy efficiency, renewable energy and water-saving improvements on-site. PACE financing provides a solution that addresses three main barriers for non-residential property owners who want to implement improvements to their buildings:

1) The need for upfront capital to fund projects;
2) Requirement of a personal guarantee to access reasonable financing terms; and,
3) Split incentives between property owners and their tenants.

Unlike a traditional commercial loan product, PACE financing is paid back twice a year through an assessment on the property taxes. Since the financing is tied to the property through the property tax system, a personal guarantee is not needed. Access to financing is based on the property's history, and if the property is sold, the repayment obligation transfers to the new owner. Since the financing is paid through the property tax bill, the financing cost is typically paid using an operations budget, rather than a capital expenditure budget. Most commercial leases allow operational expenses to be passed through to the tenants, eliminating the split incentives issue. In addition, PACE financing can fund up to 100% of the project's installed costs, eliminating the need for upfront capital for the project.

The PACE Financing Program in Los Angeles County was initially launched and funded in 2011 as a joint effort between Los Angeles County and the City of Los Angeles using American Recovery and Reinvestment Act (ARRA) grant funds. At that time, the County acted as the Program administrator creating the legal documents and the assessment district, issuing PACE bonds to investors and providing the payment mechanism through the property tax system. The City marketed the program, provided free audits, and created a Debt Service Reserve Fund for property owners in the City of Los Angeles using its ARRA funds. In July 2012, the ARRA grant funding for the City ended and the County took over all of the Program functions in addition to its previous responsibilities for PACE.

During the 2012 SCE/SCG ARRA Continuation Contract, the PACE team split their time and energy between operational planning and stakeholder outreach. The PACE team issued an RFP for a market research firm and awarded a contract to create a targeted list of identified stakeholders along with a corresponding Marketing and Outreach Plan that would direct a more strategic approach for the outreach team. Administrative and marketing materials, including a website, were created to support outreach with specific messaging to each of the targeted stakeholder groups. In addition, a special team of outreach staff (called "Project Developers") was created to provide project management and technical assistance for

property owners by helping them to apply for PACE financing, complete an energy audit, obtain mortgage lender approval, and identify potential tax benefits, utility rebates and incentives. The goal for PACE financing is to overcome the traditional barriers previously identified resulting in more projects moving from pipeline lists and into realization.

Objectives

The objective of the PUC-funded Non-Residential PACE Financing Program is to fund as many commercial, industrial and large multi-family energy efficiency, renewable energy and water saving projects as possible while taking advantage of all available rebates, incentives and tax benefits. The PACE team will target projects that are shovel-ready and have been delayed or canceled due to one of the three barriers identified earlier. PACE Project Developers will provide project management and technical assistance for property owners by helping them to apply for PACE financing, complete an energy audit if needed, obtain mortgage lender approval, and identify potential tax benefits, utility rebates and incentives. Ultimately, the PACE team will strive to complete projects even if the project uses a combination of other financing, such as On-Bill Financing or Repayment, or utility rebates and incentives combined with cash. At the close of the 2013-2014 Transition Period, the program will measure its impact on the marketplace by answering the following questions:

1) Did the addition of PACE Project Developers and one-on-one customer assistance increase the number of applications and financed projects?
2) Did interest rates and terms become more favorable as the number of financed projects increased?
3) What is the average project cost compared to energy and water saved?
4) What types of measures are financed most frequently? How does this affect or change the target market?
5) Are mortgage lenders and investors more comfortable with PACE financing as a new investment instrument?
6) Were properties with tenants able to avoid the split-incentive issue?

Program Partners known when PIP was filed

During the 2012 contract period, the PACE Financing program was managed by Los Angeles County through its contract with Bevilacqua Knight (BKi). Other Program Partners included:

- The Energy Coalition. The Energy Coalition (TEC) was chosen to manage and provide general outreach for the Southern California Regional Energy Center (SoCalREC), a pilot program that included a financing component with many similarities to PACE. Having a single implementation manager for LA County's combined non-residential financing programs allows leveraged opportunities for cross promotion, centralized database management and expertise, and streamlined tracking of program progress. TEC also manages third party engineering review and verification of ASHRAE audits for the non-residential financing programs, including PACE.
- Renewable Funding. Since there are many PACE programs across California which often share many of the same regional or national stakeholders (such as large property owners, property managers, construction companies, financial institutions), program consistency is important to maintain in order for PACE to earn broad acceptance in the marketplace. As a major player in affecting PACE legislation, advising PACE programs nationwide, and administering their own PACE program, Renewable Funding provides the LA County PACE team with the national and regional perspective linking the local program to the larger web of programs and stakeholders.
- Sustento Group. Dave Hodgins was the prior program manager for the City of Los Angeles' portion of the initial PACE program, and therefore has a historical understanding of the program. In his role as a Project Developer with the current PACE program, Dave Hodgins works in concert with RenewAll in reaching out to financial institutions to find investors for PACE projects, help property owners finalize their PACE financing agreements, and get lender consent.
- RenewAll. In addition to Susteno Group, RenewAll serves as a PACE Project Developer in Los Angeles County. As an approved agent of SCE and LA City's Department of Water and Power

(LADWP), RenewAll understands utility processes, On Bill financing, and utility rebates and incentives; RenewAll guides property owners through the process of getting an audit, determining the scope of work, and finalizing a type of financing that works with available rebates and incentives.

- O'Rorke. To support the Project Developers and the general outreach, O'Rorke maintains contact databases for potential leads and important stakeholders. They also maintain and update all materials and the public facing website, as well as monitor the lead outreach identified within the market segmentation and outreach plans.
- BKi. Working with O'Rorke, BKi will manage the administrative portal of the web site allowing the PACE team to track, collect, and report on data.
- Willdan Financial. Willdan Financial currently processes the PACE applications and conducts a desktop review to verify eligibility requirements, but may be replaced by another company during this program cycle.

Activities & Budget

Program Activities will be divided into the following four categories and budget:

Activity	Description	Funding Source	Budget
Marketing PACE financing	Create and maintain website and marketing materials. Staff and support outreach events and general information center.	PUC SoCal REN funding	$220,978
Project Development	Property owner, contractor, and financial institution assistance for live projects.	PUC SoCal REN funding	$322,600
Application Processing & Technical Review	Program management and coordination. Perform quality	PUC SoCal REN funding	$638,904

	assurance. Consult with legal, tax, and engineering experts.		
Program Administration	Contract administration and reporting.	PUC SoCal REN funding	$229,018
Total Budget			$1,411,500

Marketing PACE Financing

PACE financing currently can be used to fund projects for commercial, industrial or non-residential properties in Los Angeles County that are proven to save energy or water or create renewable energy on-site. Within these parameters, ideal properties and projects include some of the following characteristics:

- Upgrade projects with projected construction costs over $250,000.
- Properties with high energy bills.
- Projects stalled due to funding and/or deferred maintenance projects.
- Properties with tenants such that project costs and savings can be passed through to the tenants.
- Portfolio properties.
- Properties with little capital improvement budget or needing to preserve it for other purchases.

For all non-residential upgrade projects more than $250,000 in projected construction costs, the PACE team will market PACE financing. Acting as the source program for this financial product, the PACE team, through its Project Developers, offers the services required to assist in identifying a scope of work, reviewing and verifying an ASHRAE audit, coordinating with the utility rebate and incentive programs, acquiring a project financer, and attaining mortgage lender approval as needed.

With the goal of marketing PACE financing to the properties and project types identified above, four types of stakeholder groups were identified, each requiring their own targeted messages and outreach methods:

1) General Outreach (includes local governments, trade organizations and community groups)
2) Contractors and trade unions

3) Building owners
4) Financial institutions

As a result, the PACE team will market the program through four distinct strategies:

- Explain how PACE Financing is a viable strategy to fund existing shovel-ready energy efficiency non-residential projects.
- Demonstrate how commercial properties can bundle a variety of projects within one consolidated financing product.
- A method to overcome the split-incentive issue.
- A method to finance improvement while maintaining positive cash-flow from day one.

Financing will be used as a conversation starter to reawaken stalled or deferred projects. Marketing materials and a website geared towards each of the target stakeholders promoting PACE financing have already been created through previous funding and are currently in use. During the 2013-2014 Transition Period, the marketing materials and website will be updated and new materials will be created to target specific groups. In addition, PACE marketing materials will be bundled with marketing from additional financing programs, such as On Bill Financing, that may also have appeal to a similar target audience causing the need for side-by-side comparisons and other items to be developed.

In accordance with the four major stakeholder groups identified previously, different types of outreach will be used to reach the target audiences. General outreach will include participation in trade shows and events, presentations to cities and other large stakeholder groups, and responding to stakeholder inquiries. Outreach to contractors, property owners and financial institutions will be conducted on a broader scope through webinar trainings and presentation to trade and specialty organizations. As a project is identified, that particular stakeholder will be transferred to a Project Developer and is discussed below.

Project Development

During 2012 in which PACE has been available to property owners, the PACE team realized that a new role had to be created in order to navigate property owners through a completed project. Since energy efficiency projects are new to many property owners, presenting them with the myriad requirements (such as acquiring an energy audit, evaluating energy savings as part of their cash flow, navigating the utility incentive, rebate and quality assurance processes and paperwork, and obtaining innovative financing such as PACE) can be overwhelming. PACE Project Developer positions were therefore created to provide project management and technical assistance support for the property owner.

PACE financing has many benefits over traditional loan financing. However, its property tax-based structure that provides security and repayment of the financing, requires additional steps and various parties (property owner, contractor, ASHRAE auditor, mortgage bank, investor, bond counsel, and the County's Treasurer and Tax Collector) to complete a transaction. It is a new process that the PACE Project Developers help property owners and financers to navigate.

Similarly, energy efficiency financing using PACE is new to banks. Banks typically fund energy efficiency and renewable energy projects as a typical loan, rather than taking into account that the energy savings results in monthly cash flow savings that, if structured correctly, will result in a PACE-funded project that is cash-flow-positive from the first day. Project Developers aid prospective investors in calculating and quantifying energy savings and creating these cash flow diagrams.

PACE administration and processing

Although fees directly associated with processing the Initial Application and the Final Application and closing the PACE financing are incurred by the property owner, the PACE team provides other administrative and processing functions that are not covered by those fees. Some of these functions include third party engineering review of audits as needed, tracking metrics and project information through the administrative portal, getting professional legal and tax advice on PACE financing terms, , making program design

decisions and maintaining stakeholder databases, and reporting. In addition, a Program Handbook will be created and maintained that will include property owner, audit, project, legal, and other programmatic requirements. It will include a list of eligible measures in order to more quickly determine those that have been pre-qualified as acceptable while at the same time maintaining a tract through which a property owner may submit a custom measure to the program for approval. All measures financed under PACE will be required to submit an audit with proposed energy savings on which approval for applications is contingent.

Verification of Energy Savings and Installed Measures

Under Assembly Bill 811 and subsequent related bills, such as Assembly Bill 474, PACE can be used to finance those measures proven to be energy efficient, water efficient or to produce renewable energy and are located permanently on the property's site. Los Angeles County requires an audit to be submitted with all applications in order to verify the proposed energy and water savings. An ASHRAE level 2 audit is required for energy efficiency measures. A solar audit with the following information is required for solar projects:

System Info:

- Solar Panel Type
- Inverter Make/ Model
- System Size (kw-DC)
- Azimuth/ Tilt/ Standoff/ Shading DeRate
- System Warranty
- Production Guarantee (if included)
- Total % of customer's annual energy usage estimated to be offset by the solar system
- Annual Production (kWH)
- Typical Demand (kW)

Payback Info

- System Installed Cost
- Price per kWh
- Assumed percentage annual increase in utility energy cost (should be between about 2-7%, preferably on the lower end)
- Assumed annual production degradation (should match system warrantee)
- Assumed cost of inverter replacement and when
- Expected Incentives
- Copy of the output from the EPBB calculator that is used to estimate the CSI incentive
- Calculated Payback

If a project installs water-saving measures, the program requires a water audit that follows the conditions outlined in the "Water Efficiency Prerequisite 1" of the US Green Building Council's Leadership in Energy and Environmental Design (LEED) for Existing Buildings 2009 Manual. This manual outlines a method to calculate a building's baseline water usage prior to improvements compared to the water usage post improvements and resulting in the number of gallons saved due to the project. When applicable, each measure installed in the project must also apply for the corresponding utility rebate and submit the utility approval application with their PACE application. By requiring this with the PACE application, a project financed through PACE can have its savings verified through the utility's incentive and rebate system.

Deliverables

Deliverables for this program will be centered around identifying whether or not a not a project is moving forward with implementation due to the existence of the PACE financing option. The projects will be tracked similarly using the SoCalREC tracking mechanism. The tracking tool will include an online process for submitting the Initial Application, Final Application and all supporting documents. Through this tool, information about eligibility, building characteristics, project types, scopes of work, energy savings, and applied rebates will be tracked. To the extent possible, projects that obtain financing through the PACE program will also include information about the loan itself including financier, mortgage holder, loan amount, repayment terms, and interest rate.

Other deliverables and their timelines are included in the table below:

Deliverable	Timeline
Develop online Initial Application, Final Application and User portal for document upload	Q2, 2013
Develop PACE administrative portal and tracking tool	Q2, 2013
Maintain website and marketing materials	Ongoing
Maintain Contact database & call log	Ongoing
Webinars geared to stakeholder groups	Ongoing (Scheduled on regular basis)
Develop and maintain Program Handbook	Q2 (Develop) Ongoing

	Maintenance
Collateral material inclusive of other financing programs	Q2, 2013
Quarterly reports on PACE application activity	Q2, Q3, Q4, 2013 Q1, Q2, Q3, 2014
Yearly report on PACE activity, progress, and program design assessment	Q4 2013
Final report for program cycle	Q4, 2014

Goals

Projected Loan enrollment targets

The goal is provide administrative and marketing and outreach support to commercial property owners that results in the following:

- 10 loans over $250,000 each completing the initial PACE application
- 5 loans over $250,000 each completing the final PACE application
- 5 loans over $250,000 each completing a PACE-funded project
- 5 loans over $250,000 each in the pipeline for 2015.

The funding associated with this financing program is for marketing and administration of a PACE financing program for Non-residential properties using private capital and standard underwriting criteria. Although there are PACE programs in operation all over the State, PACE is still a new program with few completed projects; consequently, there is still much to learn regarding to whom and how to properly position PACE for mainstream success. A year-end assessment will be made to determine if program design modifications, if any, are necessary, in which case SoCalREN will revise the deliverables, goals, and milestones for review and approval.

Metrics

The following table demonstrates the methods for evaluation and measurement as well as the process for tracking the metrics listed

Metric	Data collected
Marketing	# of attendees at workshops, # of e-blasts distributed, click-through rates on email marketing pieces, # of hits to webpages
PACE Projects financed	# of Initial Applications filed, # of Final Applications signed, # of PACE assessments placed
Interest list	# of meetings/ presentation about PACE financing held
Projects influenced by PACE team	# of incentive applications submitted
Project type financed	Measures descriptions for all items included in scope
Pipeline projects	# of Initial applications filed, # of Final Applications pending

B5: Establishment of public agency energy upgrade revolving loan fund program - $ 472,000

Introduction

Local governments play a critical role in furthering the State's energy efficiency goals by addressing barriers within its own sector as well as those of its constituents. Significant progress has been made in retrofitting municipal facilities and infrastructure due in large part to the 2009 American Recovery and Reinvestment Act (ARRA). The successes and lessons learned from these projects have created a strong foundation and momentum from which local governments can build upon to pursue additional energy efficiency projects. Many opportunities remain for local government and public agencies to invest in energy efficiency.

Purpose

The Public Agency Revolving Loan Fund Program (PA RLF) was designed to offer a simplified method for the marketing and administration of financing mechanisms for the Southern California Regional Energy Center (SoCalREC), a sub-program of the Southern California Regional Energy Network (SoCalREN). In accordance with the November 8, 2013 Final Decision (A.12-07-001), "it may be valuable to have SoCalREN do marketing activities to promote other financing offerings. Therefore, we will approve the funding for administration and marketing, but not for the revolving loan fund itself.". This description provides

detail on activities, goals, timelines, and deliverables. In addition, this description provides baseline metrics and methods to measure progress and key milestones during the 2013-2014 Program cycle.

In the original PIP, SoCalREN proposed funding of revolving loans for public agency buildings as part of the program design. Pursuant to D.12-11-015, this final PIP no longer includes this element which was not approved, but does include the marketing of available financing mechanisms such as those funded by the Energy Commission from ARRA sources. Therefore, the administrative as well as marketing and outreach support of all other available financing programs to public agencies falls under the auspices of the Public Agency Revolving Loan Fund.

Background

The PA RLF program was designed to offer marketing and outreach of a specific financing option for public agencies as a component of the SoCalREC, a sub-program of the SoCalREN. Under the SCE/SCG 2009 American Recovery and Reinvestment Act (ARRA) Continuation Program scope of work, Los Angeles County was tasked with exploring the creation of a unified revolving loan fund program that offered short-term loans to public agencies. In a revolving loan fund, energy savings from past energy efficiency projects are used as "seed money" for a fund that provides loans for other energy efficiency projects. However, the revolving loan fund was not considered feasible since each public agency has unique financial considerations, and without seed funding, there is no way to fund initial participants' loans to establish the fund. In addition, the outside lender participation is not efficient for small short-term amounts unless there is seed funding and history of operations. SoCalREC recognized that another solution was to promote the development of individual revolving loan funds for each public agency with rebate incentive receipts as the seed money for the fund.

During the 2012 ARRA Continuation Contract with the IOUs, SoCalREC began working on two parallel initiatives:

- Promoting all available financing options
- Recommending policy changes for public agencies to help develop internal revolving loan funds.

SoCalREC has held workshops to promote programs such as the SoCalREC Master Lease Financing and the IOU On-Bill Financing (OBF). In addition, SoCalREC also began the development of a guidebook for local governments that outlines steps for the development and administration of internal revolving loan funds. The guidebook (still in process) will illustrate a step-by-step approach for developing policy, obtaining stakeholder support, assessing project eligibility, and "seeding" of the fund. The guidebook should be available for local government use by the end of the first quarter in 2013.

It is critical that marketing, education and outreach be provided to local governments (and all public agencies) regarding financing energy projects as many industry experts agree (including the Commission's Financing Consultant – Harcourt, Brown and Carey) that many financing options exist for local governments. However, what is preventing greater participation is a better understanding of how and why financing programs will benefit local governments.

Objectives

There are two objectives for the Public Agency RLF Program:

1. Provide financing solutions to help move SoCalREC projects towards implementation; these solutions include awareness of existing programs, understanding of financing program terms and conditions, addressing common misperceptions about financing, overcoming typical challenges with financing.
2. Provide administrative support to agencies for developing Revolving Loan Funds and implementing financing programs into their organizations fiscal management.

1. Provide Financing Solutions

Through public agency feedback, SoCalREC discovered that there was limited availability and understanding of "turn-key' financing mechanisms, such as standardized underwriting criteria, competitive

interest rates attractive to cost-conscious jurisdictions, and adequate information for agencies to make investment decisions regarding energy efficiency.

Therefore, a primary objective of this program is to provide administrative support and marketing and outreach about financing solutions that help to move energy efficiency projects towards implementation.

The intent is to promote a menu of financing options to public agencies (e.g. Master Lease Program, On-Bill Financing, etc.), without favoring any one program. SoCalREC will help public agencies to find solutions for specific project types, and provide the knowledge and expertise to public agencies regarding applications, document organization, and technical assistance.

Additionally, this program will address common misperceptions that local governments have regarding financing, including: a lack of knowledge regarding project costs, an inability to measure savings, impacts to jurisdictions' "debt ceiling," how loans are secured, that budget commitments cannot be extended over multiple years, to name a few. Very few jurisdictions have invested the time and resources to resolve these issues and take advantage of low-cost financing. This messaging will be developed and delivered to all levels of decision makers within local government including technical, financial, executive and legal.

2. Provide Administrative Support to Agencies for Developing Revolving Loan Funds

Through the program, SoCalREC will provide interested public agencies with guidebooks to help them to establish their own revolving loan fund. Regardless of where a public agency may be on the revolving loan development continuum, SoCalREC will provide the necessary technical assistance to help establish a loan fund. A revolving loan fund is really no different than the existing financing products that are on the market. Whether through seed funding under a revolving loan fund, or through a traditional financing product, initial funding is provided to initiate a project and the cost of that project must be paid back.

A revolving loan fund provides a unique benefit in that the loan can be managed "internally" and does not necessarily require a third-party agreement. However, the core challenges described above still

exist, as do the administrative challenges of understanding how an energy project loan can be integrated into existing fiscal and energy management procedures.

These challenges include:

- Understanding how utilities budgets are ideally managed,
- How utilities budgets can be leveraged to facilitate loans,
- How loan status and repayments can be managed and tracked,
- How loan administrative costs can be managed,
- How to manage loans with "split incentives" for landlord/tenant relationships,
- Handling utility and other incentives under loans,
- How to pay for administration of the loan program, equating project savings and loan payments, and
- Other fundamental questions.

Projected Loan enrollment targets:

The goal is to provide administrative and marketing and outreach support that results in the following:

- 40 loans that have completed their application.
- 15 loans that have pending applications to be completed in 2015.
- 2013
    - 20 loans Up to 3,500,000 kWh
    - Up to 45,000 therms
- 2014
    - 20 loans Up to 5,250,000 kWh
    - Up to 60,000 therms
- Pipeline 2015
    - 15 loans Up to 1,750,000 kWh
    - Up to 20,000 therms

Program Partners known when PIP was filed

During the 2012 SoCalREC pilot period, the Revolving Loan Fund program was managed by Los Angeles County through a contract with The Energy Coalition, with the participation of Public Financial Management (PFM). PFM was responsible for drafting the initial guidebook that outlined the process for establishing an internal revolving loan fund for public agencies. PFM will continue to assist cities using the guidebook with technical support, templates and documents, and other financial expertise.

In addition, using ARRA funds, Los Angeles County implemented an internal revolving loan fund program for County buildings. This effort included addressing all of the challenges identified above as well as satisfying the requirements of the original seed fund provider – the California Energy Commission and the Department of Energy. This Los Angeles County loan program will generate funds for projects for decades through an initial $6 million investment. The mechanics of implementing this program into the County's central Utilties Budget, while addressing the County's general accounting principles and budgeting requirements, will also be documented and presented to stakeholder peers in other jurisdictions.

Activities and Deliverables

Program activities will be based on the two objectives in the previous section:

1. **Marketing and Outreach:** Provide financing solutions to help move SoCalREC projects towards implementation; these solutions include awareness of existing programs, understanding of financing program terms and conditions, addressing common misperceptions about financing, overcoming typical challenges with financing.
2. **Direct Implementation**: Provide administrative support to agencies for developing Revolving Loan Funds and implementing financing programs into their organizations fiscal management.

1. Marketing and Outreach: Provide financing solutions to help move SoCalREC projects towards implementation

During the last funding cycle, SoCalREC provided general information regarding project financing to local governments through newsletters and workshops. For the 2013-2014 funding cycle, the marketing

strategy will build upon these previous efforts to promote financing options to move projects towards implementation. SoCalREC will market all available financing programs to public agencies via newsletters, , speaking engagements, and trade shows. The development and promotion of new marketing collateral will help to hold the interest of public agencies and keep them informed.

Through simple clarification of the financing mechanisms and process, public agencies will better understand how to finance their energy efficiency project.

SoCalREC will first develop a series of finance-related marketing materials including collateral information with side-by-side comparisons between the various financing options, an online decision tree, and a financing section on the SoCalREC website.

SoCalREC will also develop education and outreach materials that address the most common misperceptions and challenges that local governments typically raise when considering the adoption of financing. These materials will be developed for different stakeholders within an organization that will be involved in the decision-making process for adopting financing programs.

SoCalREC will then work with strategic partner organizations to obtain speaking engagements while the outreach team attends relevant trade shows aimed at reaching the target market. The team will also include sections on financing opportunities at all public agency focused workshops where city managers, finance directors, and other stakeholders can learn firsthand about the pros and cons of each financial vehicle.

The true benefit of this activity is applying the expertise of the SoCalREC team to help local governments and public agencies find the best financing solution for their unique projects. This type of "grassroots" expertise will be leveraged through other existing SoCalREC services such as technical assistance, project procurement, and project management through implementation.

Deliverables

- Update current website content about financing
- Update existing contact database for greater outreach
- Develop collateral material comparing financing options, overcoming challenges/misperceptions and administering financing programs for public agencies.
- Develop education, best practice materials
- Acquire information from practicing agencies
- Include slides about financing in public agency presentations
- Post new information on SCREN website
- Attend outreach events and have meetings with key stakeholders
- Create case studies from Actual RLF/Financed Projects
- Assist public agencies with financial analysis on actual energy efficiency projects
    - Educate public agencies on SoCalREC Master Lease financing
    - Educate public agencies on IOU on-bill financing program offerings
    - Educate public agencies on other financing options available for projects
    - Analyze actual energy efficiency projects and present agencies with recommendation mixes of financing
    - Assist the agencies with loan applications
    - Assist the agencies obtain internal stakeholder support
    - Assist the agencies with documentation and energy efficiency calculations necessary to get financing
    - Leveraging SoCalREC technical support, assist agencies with EM&V for repayment set-up and logistics

2. Direct Implementation: Provide administrative support to agencies for developing Revolving Loan Funds and implementing financing programs into their organizations fiscal management

SoCalREC will work with local government jurisdictions to increase their understanding of the potential to leverage traditional financing with revolving loans. The idea here is that if a local government fully understands the benefits of innovative energy project financing, they would be more likely to finance the

revolving loan fund with cash saved through existing energy efficiency projects as capital for future projects. Tasks included in this activity would include:

- Revising the existing and somewhat dated revolving loan fund guidebook to address challenges and misconceptions and identify other viable financing programs.
- Providing assistance to local governments to draft policy language for a revolving loan fund, and other financing programs including integration of energy project financing into Local Government internal energy management programs, finance and accounting procedures, and debt management requirements, and
- Helping public agencies through the approval and implementation process to establish a revolving loan fund or other financing program.

Deliverables

- Templates for revolving loan fund or energy project financing implementation
- Revise RLF Guidebook to include, but not limited to:
    - Explain how a Public Agency Energy Management Budget should be structured
        - Centralized utilities budget description/establishment
        - Inter-organizational hierarchy description/establishment
        - Central accounts collection and payment benefits/steps
        - Utilities overhead charge to pay for services (show examples, benefits, economies of scale needs)
    - Explain intricacies of public agency utilities accounting
        - Multiple building "tenants" under one account (single-meter residential account)
        - Multiple accounts on one facility/campus
        - Federal/state/other subsidies ("subvention")
        - Some subsidies include reimbursements for operating costs (including utilities)
        - Split incentives issue
        - Public agencies are tenants in some buildings/accounts

        - Public agencies are landlords in some buildings/accounts
        - Leases treat utilities differently
    - Explain Financing Challenges
        - Education: no internal expertise on identifying opportunities, benefits, costs
        - Multiple options: no internal expertise to evaluate options
        - Procurement: no expertise or resources to procure
        - Fear of getting "burned" leads to inactivity
        - Debt limitations: lack of understanding about secured debt and impact on internal limits
        - Public Agency Generally Accepted Accounting Principles must be followed
        - Public Agency Budgeting Procedures may need altering
        - Public Agency financing practices may need altering or clarification
    - Show Financing "Flow Paths" for Projects
        - Explain ways for using project savings to "pay for" projects
        - Estimating and measuring savings
        - Impacts on savings (weather, change in operations, structural changes, etc)
        - LA County Energy Savings Investment Program (RLF using CEC funds)
        - CEC Gov't Low Interest Finance Program (CEC RLF for public agencies)
        - Other Financing Programs (financing with no upfront cost)
        - Energy Efficiency Power Purchase Agreements
    - Explain How Financing Can Succeed in a Public Agency
        - Use SoCalREC services/EEMIS to Identify Projects and Manage Energy
        - Use SoCalREC to prioritize potential projects
        - Use SoCalREC to implement projects, track savings
        - How to set up a RLF/Financing accounting system
        - Getting agreements with interagency organizations for the RLF
        - Establishing agreements with "financers" for RLFs (may be agency itself)
- Assistance for local governments in establishing an internal revolving loan program or adopt internal policies for utilizing traditional energy project financing programs.

- Look for projects and opportunities that could benefit from a revolving loan or financing program
- Assist agencies with documentation needs necessary to establish a revolving loan or financing program
- Assist agencies in obtaining internal stakeholder support
- Provide technical support and expertise to agencies
- Coordinate SoCalREC technical support on energy efficiency realization and budget tracking
- Assist the agency identify seed money for principal for the revolving loan program

Deliverables/Tasks	Budget/Timeline
1. Marketing	**$10,000**
Update current website content about financing	Q3, 2013
Update existing contact database for greater outreach	Q3, 2013
Develop collateral material comparing financing options, overcoming challenges/misperceptions and administering financing programs for public agencies.	Q3, 2013
Develop education, best practice materials	Q4, 2013
Acquire information from practicing agencies	Q3, 2013
Include slides about financing in public agency presentations	Q3, 2013
Post new information on SCREN website	Q4, 2013
Attend outreach events and have meetings with key stakeholders	Ongoing
Create case studies from Actual RLF/Financed Projects	Q1, 2014
Assist public agencies with financial analysis on actual energy efficiency projects Ongoing • Educate public agencies on SoCalREC Master Lease financing • Educate public agencies on IOU on-bill financing program offerings • Educate public agencies on other financing options available for projects • Analyze actual energy efficiency projects and present agencies with recommendation mixes of financing • Assist the agencies with loan applications	Ongoing

• Assist the agencies obtain internal stakeholder support
  o Assist the agencies with documentation and energy efficiency calculations necessary to get financing
  o Leveraging SoCalREC technical support, assist agencies with EM&V for repayment set-up and logistics	

2. Direct Implementation	**$272,088**
Templates for revolving loan fund or energy project financing implementation	Q4

Revise RLF Guidebook to include, but not limited to:
• Explain how a Public Agency Energy Management Budget should be structured
  o Centralized utilities budget description/establishment
  o Inter-organizational hierarchy description/establishment
  o Central accounts collection and payment benefits/steps
  o Utilities overhead charge to pay for services (show examples, benefits, economies of scale needs)
• Explain intricacies of public agency utilities accounting
  o Multiple building "tenants" under one account (single-meter residential account)
  o Multiple accounts on one facility/campus
  o Federal/state/other subsidies ("subvention")
  o Some subsidies include reimbursements for operating costs (including utilities)
  o Split incentives issue
  o Public agencies are tenants in some buildings/accounts
  o Public agencies are landlords in some buildings/accounts
  o Leases treat utilities differently
• Explain Financing Challenges
  o Education: no internal expertise on
	Q1

identifying opportunities, benefits, costs ○ Multiple options: no internal expertise to evaluate options ○ Procurement: no expertise or resources to procure ○ Fear of getting "burned" leads to inactivity ○ Debt limitations: lack of understanding about secured debt and impact on internal limits ○ Public Agency Generally Accepted Accounting Principles must be followed ○ Public Agency Budgeting Procedures may need altering ○ Public Agency financing practices may need altering or clarification • Show Financing "Flow Paths" for Projects ○ Explain ways for using project savings to "pay for" projects ○ Estimating and measuring savings ○ Impacts on savings (weather, change in operations, structural changes, etc) ○ LA County Energy Savings Investment Program (RLF using CEC funds) ○ CEC Gov't Low Interest Finance Program (CEC RLF for public agencies) ○ Other Financing Programs (financing with no upfront cost) ○ Energy Efficiency Power Purchase Agreements • Explain How Financing Can Succeed in a Public Agency ○ Use SoCalREC services/EEMIS to Identify Projects and Manage Energy ○ Use SoCalREC to prioritize potential projects ○ Use SoCalREC to implement projects, track savings ○ How to set up a RLF/Financing accounting system ○ Getting agreements with interagency	

organizations for the RLF ○ Establishing agreements with "financers" for RLFs (may be agency itself)	
Assistance for local governments in establishing an internal revolving loan program or adopt internal policies for utilizing traditional energy project financing programs. • Look for projects and opportunities that could benefit from a revolving loan or financing program • Assist agencies with documentation needs necessary to establish a revolving loan or financing program • Assist agencies in obtaining internal stakeholder support • Provide technical support and expertise to agencies • Coordinate SoCalREC technical support on energy efficiency realization and budget tracking • Assist the agency identify seed money for principal for the revolving loan program	Ongoing

Reporting

The projects will be tracked utilizing the SoCalREC tracking tool. The SoCalREC tracking tool will include information about project types, scopes of work, energy savings, and rebate applications. SoCalREC projects that obtain financing (through any source) will include pertinent loan data including: loan amount, repayment terms, interest rate, and non-rebated measures financed.

Note: If a project uses the SoCalREC's Master Lease financing for projects over $250,000, the project will be tracked as part of the Public Agency Loan Loss Reserve Program. This Revolving Loan Fund Program will be used to track all other financing options.

- In addition to monthly narrative and project reporting, SCREN will generate the following additional reports:Quarterly reports on loan activity for SoCalREC related projects
- Quarterly reports on marketing activities including presentations, speaking engagements, and events attended where financing was promoted
    - Number of events
    - Number of attendees at workshops
    - Number of e-blasts distributed
    - Click-through rates on email marketing pieces
    - Number of hits to webpages
- Yearly report on loan activity, progress, and program design assessment
    - Numbers of public agencies informational meetings about financing where SoCalREC technical services were offered
    - Number of project financing mechanisms initiated (what type of financing chosen, specific measures and financing type)
    - Number of applications in the pipeline for financing pending at end of 2014
    - Number of revolving loan fund guidebooks distributed
    - Number of agencies requesting technical assistance with RLF;
    - Number of revolving loan funds initiated
- Final report for program cycle

Timeline

Deliverables and their timelines are included in the table below:

Deliverable	Tasks	Timeline
Provide financing solutions to help move SoCalREC projects	Update current website content about financing	Q2, 2013

towards implementation	Update existing contact database for greater outreach	Ongoing
	Develop collateral material comparing financing options, overcoming challenges/misperceptions and administering financing programs for public agencies.	Q2, 2013
	Develop education, best practice materials	Q3, 2013
	Acquire information from practicing agencies	Q3, 2013
	Include slides about financing in public agency presentations	Q2, 2013
	Post new information on SCREN website	Q3, 2013
	Attend outreach events and have meetings with key stakeholders	Ongoing
	Create case studies from Actual RLF/Financed Projects	Q3, 2013
	Assist public agencies with financial analysis on actual energy efficiency projects	Ongoing
Provide administrative support to agencies for developing Revolving Loan Funds and implementing financing programs into their organizations fiscal management	Templates for revolving loan fund or energy project financing implementation	Q3, 2013
	Revise RLF Guidebook	Q3, 2013
	Assistance for local governments in establishing an internal revolving loan program or adopt internal policies for utilizing traditional energy project financing programs.	Q3, 2013
Reporting	Quarterly reports on loan activity for SoCalREC related projects	Q3-Q4, 2013. Q1-Q4, 2014
	Quarterly reports on marketing activities including presentations, speaking engagements, and events attended where financing was promoted	Q3-Q4, 2013. Q1-Q4, 2014
	Yearly report on loan activity, progress, and program design assessment	Q1, 2014.

	Final report for program cycle	Q4, 2014

END OF DESCRIPTION OF SUBPROGRAM B: FINANCING

b) **Sub-Program Energy and Demand Objectives** - If this sub-program has energy and demand objective, please complete Table 2.

Table 2 (Subprogram B). Projected Sub-Program Net Energy and Demand Impacts, by Calendar Year[21]

	2013	2014	Total
Sub-program B: Financing			
GWh	6.2 (8.8 gross)	5.1 (7.2 gross)	11.3 (16.0 gross)
Peak MW	.54 (.69 gross)	.45 (.56 gross)	.99 (1.3 gross)
Therms (millions)	0.086 (0.14 gross)	.071 (.12 gross)	.16 (.26 gross)

c) **Program Non-Energy Objectives**:

This Subprogram B achieves the Guidance Ruling on 2013-2014 Energy Efficiency Portfolios Order (No. 22) requiring continuation of successful financing programs that were originally supported by ARRA funding in 2011 and 2012 and implemented by third parties, local governments, and/or via the California

[21] Individual utility specific information to be provided in this table

Energy Commission; and development of a set of new financing programs to be designed in 2012, and then offered consistently on a statewide basis, in pilot form in 2013, and on a larger scale in 2014.

This Subprogram B will help achieve the Guidance Ruling on 2013-2014 Energy Efficiency Portfolios Order (No. 23) requiring the IOUs to propose financing programs that include: a credit enhancement strategy for single family residential market, a financing program strategy designed specifically for the multi-family residential market, and a credit enhancement strategy for the small business market.

This Subprogram B will also help achieve the Guidance Ruling on 2013-3014 Energy Efficiency Portfolios Order (No. 21) requiring the IOUs to hire an expert financing consultant to design new pilot financing programs for 2013-14 and to convene working groups on program design and data collection needed to support scalable financing programs in the future. This Sub-program will help to develop loan and project performance data and experience to share with larger capital market players to ensure their confidence in both debt repayment behavior and the cash flow profile of energy savings associated with the projects

Table 3 (Subprogram B): Quantitative Subprogram Targets (PPMs)

Target	2013	2014
Number of homes or buildings treated	TBD	TBD
Number of units incented or rebated	TBD	TBD

d) **Cost Effectiveness/Market Need**: What methods will be or have been used to determine whether this program is cost-effective?[22] If this is a non-resource program, describe the literature, market assessments or other sources that indicate a need for this program.

[22] If the program has energy and demand objectives, simply state that the methods contained in the Standard Practice Manual will be used. If the program does not have energy and demand objective, propose an approach to assess cost-effectiveness.

Guidance Ruling on 2013-2014 Energy Efficiency Portfolios Order No. 29 instructs the IOUs to address a strategy for maximizing portfolio cost-effectiveness by offering financing programs in coordination with rebate/incentive programs, either by offering financing in lieu of rebates and/or by lower incentives where financing is also provided. The SoCalREN will provide comments on the IOU strategy relative to the programs proposed here.

If Subprogram B: Financing is determined to be a non-resource program, the need for financing programs in the State are described in the paper created under CPUC guidance: Energy Efficiency Financing in California: Needs and Gaps (July 2011); Harcourt, Brown and Carey.

e) **Measure Savings/ Work Papers**:

a. Indicate data source for savings estimates for program measures (DEER, custom measures, etc).

- CPUC approved customized and DEER measures.
- R.09-11-014 Order 30: In their 2013-2014 energy efficiency program portfolio applications, Pacific Gas & Electric Company, Southern California Edison Company, San Diego Gas & Electric Company, and Southern California Gas Company shall propose a methodology to estimate incremental savings delivered by the statewide financing programs towards their energy savings goals, while avoiding double-counting of savings from other programs.
- R.09-11-014 Order 31: In 2013-2014 statewide financing programs, Pacific Gas & Electric Company, Southern California Edison Company, San Diego Gas & Electric Company, and Southern California Gas Company shall not require that all measures supported by financing programs be part of another utility incentive program.

b. Indicate work paper status for program measures:

Table 4 (Subprogram B): Work Paper Status

#	Workpaper Number/Measure Name	Approved	Pending Approval	Submitted but Awaiting Review
1	Customized - Indoor Lighting		X	
2	Customized - Indoor Lighting Controls & EMS		X	
3	Customized - Outdoor Lighting		X	
4	Customized - Outdoor Lighting Controls		X	
5	Customized - Motors		X	
6	Customized - VFDs		X	
7	Customized - HVAC EMS		X	
8	Customized - Chillers		X	
9	Customized - HVAC		X	
10	RCx/MBCx		X	
11	Adjust chiller water reset retrocommissioning		X	
12	Chilled water pump motor - VFD		X	
13	Data center air flow management		X	
14	Economizer - air side		X	
15	Fan static pressure reset		X	
16	Hot and cold deck reset		X	
17	Reduce lighting schedule retrocommissioning		X	
18	Revise supply fan schedule retrocommissioning		X	
19	Agricultural pump system overhaul		X	
20	Cooling tower - VFD		X	
21	Right sizing pumps		X	
22	Well pump - VSD		X	
23	Install or repair supply fan VFD retrocommissioning		AC-10166	
24	A-C compressor replacements		AC-12479	
25	Single package vertical air conditioners		AC-13224	
26	Economizer - air side		AC-15142	
27	Chilled water reset		AC-15987	
28	Frictionless compressor retrofit		AC-18574	
29	Condenser water reset		AC-25431	
30	Improved chiller sequencing		AC-32109	
31	Energy Efficient Fan Blade Retrofits		AC-34264	
32	Variable speed chiller plant optimization (Hartman Loop)		AC-39548	
33	Chiller (HVAC) Compressor - VFD		AC-43210	
34	Chiller Compressor - VFD		AC-43210	
35	Programmable thermostat		AC-45213	

36	Carbon Dioxide (CO2) Demand Control Ventilation		AC-50654	
37	Condenser fan - VFD		AC-54069	
38	Other HVAC Systems		AC-59807	
39	Variable air volume for fumehoods		AC-60598	
40	Computer room air handling unit - VFD (retrofit only)		AC-61734	
41	Constant air volume to variable air volume conversions		AC-68030	
42	Economizer - water side		AC-68473	
43	HVAC Occupancy Sensor Thermostat		AC-68796	
44	Hot water pump motor - VFD		AC-69858	
45	Condenser water pump motor - VFD		AC-74984	
46	Pneumatic to DDC controls		AC-75342	
47	HVAC - energy management system (EMS)		AC-75930	
48	Ventilation fan - VFD		AC-78722	
49	HVAC Compressor Controls		AC-79531	
50	High efficiency chillers - air-cooled		AC-85073	
51	Cooling tower upgrade		AC-86944	
52	High efficiency chillers - frictionless		AC-87463	
53	High efficiency chillers - water-cooled frictionless		AC-87463	
54	Fan static pressure reset		AC-96957	
55	High efficiency chillers - water-cooled		AC-98022	
56	Window film or glazing		BE-48901	
57	Building shell improvements		BE-60912	
58	Efficient windows		BE-78594	
59	Exterior HID de-lamping		LT−10901	
60	Interior LED integral lamps - Omnidirectional (A-lamps, etc)		LT−12109	
61	Interior cold cathode fluorescent lamp		LT−13420	
62	Interior LED fixture replacement (utilizing approved luminaries)		LT−17492	
63	Exterior LED pool lighting		LT−23623	
64	Interior LED refrigerated case lighting		LT−32756	
65	Exterior LED outdoor pole/arm-mounted area and roadway luminaires		LT−37654	
66	Exterior linear fluorescent retrofits		LT−39008	
67	Lighting controls -occupancy sensors		LT−43077	
68	Exterior LED advertisement sign/smart sign		LT−46594	
69	Exterior compact fluorescent fixture retrofits - (excluding screw-in CFL)		LT−49472	

70	Lighting controls - energy management system (EMS)		LT–50567	
71	Interior linear fluorescent retrofits		LT–51003	
72	Exterior induction retrofits		LT–55464	
73	Interior LED integral lamps - Directional Lamps (BR, ER, PAR, MR, etc)		LT–56453	
74	Interior LED recessed, surface and pendant-mounted downlights		LT–58676	
75	Installation of new exterior induction lighting (new construction or added load only)		LT–64209	
76	Other Exterior Linear Fluorescent Lighting		LT–70908	
77	Day lighting systems with dimmable ballast		LT–74751	
78	Interior compact fluorescent fixture retrofits - (excluding screw-in CFL)		LT–76865	
79	Exterior lighting controls - occupancy sensors		LT–76878	
80	Exterior HID retrofits		LT–78723	
81	Interior linear fluorescent lamps		LT–78954	
82	Reduce lighting schedule retrocommissioning		LT–79695	
83	Exterior LED fixture replacements (utilizing approved luminaries)		LT–85834	
84	Interior linear fluorescent de-lamping		LT–86321	
85	Other Exterior Induction Lighting		LT–87643	
86	Day lighting controls		LT–90853	
87	Interior LED track or mono-point directional lighting fixtures		LT–91217	
88	Interior HID retrofits		LT–96977	
89	Motor cycling controls		MT-28473	
90	All motors less than 200 hp		MT-54002	
91	Motor generator set replacements		MT-65483	
92	Motors greater than 200 hp		MT-80691	
93	Thin client		OE-96858	
94	Industrial pump system overhaul		PM-10021	
95	Chilled water pump optimization flow configuration		PM-11099	

96	Pump controls		PM-16109	
97	Nonresidential Pool Pump - VSD		PM-21834	
98	Chilled water pump retrofit		PM-26354	
99	Right sizing pumps		PM-27202	
100	Optimize Fluid Flow System		PM-29644	
101	Well pump - VSD		PM-32978	
102	Fluid Pump - VFD		PM-35845	
103	Agricultural pump system overhaul		PM-45201	
104	Industrial Pump Retrofit		PM-50902	
105	Vacuum pumps - VSD		PM-54502	
106	Heating hot water pumps		PM-59487	
107	Pressure regulating float valves on stand pipes		PM-89013	
108	Fan controls		PM-93090	
109	Other Pumping Controls		PM-98123	
110	Wastewater Pump - VFD		PM-98434	
111	Wastwater Pump - VSD		PM-98434	
112	Heat pump replacing electric resistance block heaters in back-up diesel generators		PR-10295	
113	Right sizing air compressor		PR-10476	
114	Wastewater controls		PR-17464	
115	Efficient Satellite Communication Lab Amplifier		PR-28433	
116	Compressed air distribution modification retrocommissioning		PR-29812	
117	System optimization for compressed air		PR-38572	
118	Compressed air system repair retrocommissioning		PR-39765	
119	Gas separation and liquefaction process retrofits		PR-40970	
120	Waste water treatment - fine bubble aeration		PR-49586	
121	Compressed Air Recovery System		PR-57193	
122	Replace all or portion of compressed air system with high efficiency blower retrocommissioning		PR-61029	
123	Variable volume injection molding machine		PR-61729	
124	Professional wet cleaning equipment		PR-63889	
125	Efficient Battery Charger		PR-69844	

126	New receiver tank for compressed air system (for use in comprehensive compressed air projects only)		PR-83422	
127	Air compressor no-loss drain valves		PR-87504	
128	Molding Machine Controls		PR-89584	
129	Blower - VFD		PR-90435	
130	Reduce Compressed Air Pressure Setting - Retrocommissioning		PR-90548	
131	Refrigeration- energy management system (EMS)		RF-18607	
132	Walk-in ECM motors		RF-20986	
133	Single system to multiplex/parallel system conversion		RF-38743	
134	Low temperature high efficiency reach-in display cases		RF-40976	
135	Refrigerated case doors		RF-42400	
136	Refrigerated Case Doors- Door Miser		RF-42400	
137	High efficiency medium temperature open display cases		RF-45362	
138	Evaporator coil fan control (cycling)		RF-56398	
139	Anti-sweat heater (ASH) controls		RF-60982	
140	Refrigeration fan retrofits		RF-63798	
141	Efficient refrigeration compressors		RF-65700	
142	Low temperature reach-in door - anti fog film		RF-67581	
143	Evaporator coil fan - VFD (AC&R1 for approved use only)		RF-72821	
144	Evaporator coil fan - VFD		RF-87644	
145	Single system to multiplex/parallel system conversion (AC&R1 for approved use only)		RF-89231	
146	Rapid close doors for freezers		RF-89478	
147	Night curtains		RF-94321	
148	Replace electric water heater with heat pump water heater		WH-78213	
149	Install, repair or optimize air handler controls-retrocommissioning		AC-78325	
150	Install, repair or optimize air handler controls-retrocommissioning		AC-78325	
151	New Construction - Above Code Design - Variable Speed Drives		AC-12348	
152	New Construction - Above Code Design - Boilers		AC-49688	
153	New Construction - Above Code Design - Furnaces		AC-59688	
154	New Construction - Above Code Design - HVAC Energy Reduction		AC-59837	
155	New Construction - Above Code Design - Chillers		AC-65241	
156	New Construction - Above Code Systems Design - Parking Garage Exhaust Fan Controls		AC-67281	

157	New Construction - Above Code Design - Heat Pumps		AC-74933	
158	New Construction - Above Code Design - Air-Cooled Package A/C		AC-89604	
159	New Construction - Above Code Design - Premium Efficiency Motors		AC-98043	
160	New Construction - Above Code Design - Low SHGC Glass		BE-29134	
161	New Construction - Above Code Design - Improved Insulation		BE-38506	
162	New Construction - Above Code Design - Commercial Kitchen Appliances		FS-12019	
163	New Construction - Above Code Design - Lighting Controls		LT–16758	
164	New Construction - Above Code Design - Lighting		LT–29786	
165	New Construction - Above Code Design - Sign Lighting		LT–59888	
166	New Construction - Above Code Design - Daylighting Controls		LT–84905	
167	New Construction - Above Code Design - Water Distribution Pumping		PM-29383	
168	New Construction - Above Code Design - Wastewater Treatment Pumping and Aeration		PM-38485	
169	New Construction - Above Code Systems Design - Dairy Process Systems		PR-10743	
170	New Construction - Above Code Design - Data Center UPS Efficiency		PR-38463	
171	New Construction - Above Code Design - Data Center Cooling		PR-46373	
172	New Construction - Above Code Design - Manufacturing & Industrial Process Efficiency		PR-59848	
173	New Construction - Above Code Design - Other System Incentives		PR-66672	
174	New Construction - Above Code Design - Air Compressors		PR-69796	
175	New Construction - Above Code Design - Plastic Molding		PR-74859	
176	New Construction - Above Code Design - Clean Rooms		PR-91030	
177	New Construction - Above Code Design - Food Processing Refrigeration		RF-41934	
178	New Construction - Above Code Design - Supermarket Refrigeration Systems		RF-61872	
179	New Construction - Above Code Design - Overall Refrigeration Systems		WB-59398	

180	New Construction - Above Code Design - Overall Building Performance		WB-78495	
181	New Construction - Above Code Design - Domestic Hot Water		WH-59801	

10) Program Implementation Details

a) **Timelines:** List the key program milestones and dates. An example is included below.

Table 5 (Subprogram B): Sub-Program Milestones and Timeline

Milestone	Date
Project Initiation Meeting	Feb 2013
Complete guidelines	4/1/2013
Issue RFPs	6/1/2013
Develop Marketing materials	6/1/2013
Conclude Subprogram B	12/31/2014
Quarterly Progress Reports	3/31/2013 – 12/8/2014

b) **Geographic Scope**: List the geographic regions (e.g., CEC weather zones) where the program will operate

Table 6 (Subprogram B): Geographic Regions Where the Program Will Operate

Geographic Region	Subprogram B: Financing
CEC Climate Zone 1	
CEC Climate Zone 2	
CEC Climate Zone 3	
CEC Climate Zone 4	

CEC Climate Zone 5	X
CEC Climate Zone 6	X
CEC Climate Zone 7	X
CEC Climate Zone 8	X
CEC Climate Zone 9	X
CEC Climate Zone 10	X
CEC Climate Zone 11	
CEC Climate Zone 12	
CEC Climate Zone 13	X
CEC Climate Zone 14	X
CEC Climate Zone 15	X
CEC Climate Zone 16	X

c) Program Administration

Table 7 (Subprogram B): Program Administration of Program Components

Program Name	Program Component	Implemented by IOU staff (X = Yes)	Implemented by contractors to be selected by competitive bid process	Implemented by contractors NOT selected by competitive bid process	Implemented by local government or other entity (X = Yes)
Financing Portfolio Program	B1: Public Building Loan Loss Reserve				X (LA County)
	B2: Energy Upgrade Loan Loss Reserve				X (LA County through contractor)
	B3: Multifamily Loan Loss Reserve				X (LA County through contractor)

	B4: Non-residential PACE Loan Loss Reserve				X (LA County)
	B5: Public Agency Revolving Loan Fund				X (LA County through contractor)

d) Program Eligibility Requirements:

i. Customers: List any customer eligibility requirements (e.g., annual energy use, peak kW demand):

Table 8 (Subprogram B): Customer Eligibility Requirements

Eligibility Requirements	IOU
Public Building LLR: Located in IOU service territory. Others TBD.	X
EUC-LLR: Single-Family Detached Home. Located in IOU service territory. Meets Responsible Lending Criteria. Energy Efficiency Improvement Threshold. Others TBD.	X
Multi-Family LLR: Multi-Family Building of at least 4 Units. Located in IOU service territory. Meets Responsible Lending Criteria. Energy Efficiency Improvement Threshold. Others TBD.	X
Non-residential PACE LLR : Located in IOU service territory. Meets Responsible Lending Criteria. Energy Efficiency Improvement Threshold. Meets Definition of "Commercial" Building/Facility. Others TBD	X
Public Agency RLF: Located in IOU service territory.	X

ii. Contractors/Participants: List any contractor (and/or developer, manufacturer, retailer or other "participant") eligibility requirements (e.g. specific IOU required trainings; specific contractor accreditations; and/or, specific technician certifications required).

Table 9 (Subprogram B): Contractor/Participant Eligibility Requirements (Joint Utility Table)

Contractor Eligibility Requirement	IOU
Must be an SCE/SCG Energy Upgrade California Participating Contractor, including meeting all license and certification requirements. Others TBD.	X

e) **Program Partners:**

a. **Manufacturer/Retailer/Distributor partners:** For upstream or midstream incentive and/or buy down programs indicate[23]:

Table 10 (Subprogram B): Manufacturer/Retailer/Distributor Partners

Manufacturer/Retailer/Distributor Partner Information	SCE/SCG
Manufacturers enrolled in program	N/A
Manufacturers targeted for enrollment in program	N/A
Retailers enrolled in program	N/A
Retailers targeted for enrollment in program	N/A
Distributors enrolled in program	N/A
Distributors targeted for enrollment in program	N/A

b. **Other key program partners**: Indicate any research or other key program partners:

Other key program partners include the following:

[23] Provide in a consistent format for all IOUs. Indicate program partners across all IOU territories in one table or spreadsheet. Append to end of PIP.

- Los Angeles Department of Water and Power
- Los Angeles Regional Collaborative (LARC)
- City of Los Angeles
- University of California Los Angeles Institute of Environment and Sustainability
- Long Beach Gas & Oil
- Pasadena Water & Power
- Glendale Water & Power
- Azusa Light & Water
- City of Vernon Light & Power
- Anaheim Municipal Utility District
- Moreno Valley Electric Utility
- City of Corona Department of Water & Power
- City of Riverside Public Utilities
- Metropolitan Water District
- Irvine Ranch Water District
- Santa Ana Watershed Project Authority
- Southern California Association of Governments (SCAG)
- Southern California Air Quality Management District (SCAQMD)

f) **Measures and incentive levels**: E3 calculators will provide the list of measures and incentive levels to be provided via the program. In this section the utilities should provide a summary table of measures and incentive levels.

Table 11 (Subprogram B): Summary Table of Measures, Incentive Levels and Verification Rates

Measure Group	Market Actor Receiving Incentive or Rebate	IOU	
		Incentive Level	Installation Sampling Rate
Whole Building Retrofits Detailed list of Measures included in E3 Calcs (Please see SoCalREC Exhibit C5)	Local Government	Current IOU offering	Per IOU QA Standards

a. Use a single excel spreadsheet to indicate the eligible measures for the program across all IOUs. Indicate the expected incentive level by measure or measure grouping for each IOU, making clear where these vary.
b. For each incented or rebated measure, indicate the market actor to whom this will be provided.

g) **Additional Services:** List additional services that the sub-program will provide, to which market actors.

a. For each service provided, indicate any expected charges to market actors of the services, and/or the level at which any such services will be incented or funded.

Table 12 (Subprogram B): Additional Services

Additional Services that the Sub-Program Will Provide	To Which Market Actors	IOU
TBD	TBD	TBD

h) **Sub-Program Specific Marketing and Outreach:** Please describe, providing timelines (suggested word limit: 300 words)

This Subprogram is included in order to overcome market barriers represented by a lack of credit and financing options, combined with marketing, outreach and education (ME&O) for specific stakeholders and partners in residential, commercial and industrial sectors.

Under SoCalREN, ME&O will be targeted to lenders (conventional, credit union, and foundational) who operate in all three sectors to assure them that SoCalREN has undertaken to drive and increase demand, facilitate streamlined (electronic) processes for loan application and enrollment, and has designed a financing program of multiple options which may cross-cut and leverage each other. ME&O will also target public agency energy managers, building managers, accounting and finance staff and administrative executives to promote the benefits and advantages associated with financing energy projects – especially those that result in utility savings.

Specifically, the Energy Upgrade ME&O will promote: increased inclusiveness under a diversity of Southern California area program options; social and environmental benefits (e.g., improved indoor air quality and improved healthy spaces) as well as economic ones (decreased costs, higher building

performance, governmental incentives relating to plan review, permitting and inspection, and new valuations on energy efficiency such as Green MLS ratings); accessible and regionally consistent Financing Portfolio options and contractor/supplier incentives; and energy efficiency achieved through improvements under the water-energy nexus.

Under the Multi-Family and Non-residential PACE options, SoCalREN will implement an ME&O campaign targeted to building owners, operators and managers. Commonly, owners are reluctant to pay for building improvements that appear to only benefit tenants. However, the SoCalREN ME&O program will address this market barrier with a campaign that communicates and advocates for the value of co-benefits and advantages of whole building upgrades that build energy efficiency, financing options and incentives, as well as further demonstrates the possibilities for cash-neutral or cash-positive outcomes.

i) **Sub-Program Specific Training:** Please describe, providing timelines (suggested word limit: 300 words)

The Financing Portfolio Subprogram will engage skilled consultants, contractors and implementers, and will not require independent training.

j) **Sub-Program Software and/or Additional Tools:**

a. List all eligible software or similar tools required for sub-program participation.

   TBD.

b. Indicate if pre and/or post implementation audits will be required for the sub-program.

   TBD.

   Pre-implementation audit required ___ Yes __ No
   Post-implementation audit required ___ Yes __ No

c. As applicable, indicate levels at which such audits shall be rebated or funded, and to whom such rebates/funding will be provided (i.e. to customer or contractor).

Table 13 (Subprogram B): Program Related Audits

Levels at Which Program Related Audits Are Rebated or Funded	Who Receives the Rebate/Funding (Customer or Contractor)
TBD	TBD

k) Sub-Program Quality Assurance Provisions: Please list quality assurance, quality control, including accreditations/certification or other credentials

Table 14 (Subprogram B): Quality Assurance Provisions

QA Requirements	QA Sampling Rate (Indicate Pre/Post Sample)	QA Personnel Certification Requirements
EUC-LLR: Property must meet eligibility requirements.	100%	Credit Application with Property and Property Owner Information
EUC-LLR: Property Owners Must Meet Responsible Lending Criteria	100%	Credit Application with Property and Property Owner Information
EUC-LLR: Contractor holds valid license and meets eligibility requirements (Energy Upgrade Participating Contractor or participant in other qualified program)	100%	Job Scope with Contractor Information
EUC-LLR: Project meets requirements of program	100%	Job Scope with Contractor Information
EUC-LLR: Field Verification of Measures Installed	Dependent upon incentive/financing program	TBD
EUC-LLR: Field Verification of Combustion Safety Test for Air Sealing (relevant projects)	Dependent upon incentive/financing program	TBD
Other financing QA requirements	TBD	TBD

l) **Sub-program Delivery Method and Measure Installation /Marketing or Training:** Briefly describe any additional sub-program delivery and measure installation and/or marketing & outreach, training and/or other services provided, if not yet described above.

m) Sub-program Process Flow Chart: Provide a sub-program process flow chart that describes the administrative and procedural components of the sub-program. For example,

the flow chart might describe a customer's submittal of an application, the screening of the application, the approval/disapproval of an application, verification of purchase or installation, the processing and payment of incentives, and any quality control activities.

Please see below for a depiction (both narrative and visual – Figures 21 & 22) of LA County's processes for financing programs.

SoCalREC Financing Program Process Description (in lieu of Flow Chart): The Internal Services Department of Los Angeles County ("County") has issued the challenge to develop a regional, energy efficiency resources program ("Program") for multiple local governments within the Southern California Edison service territory. This endeavor has precedent-setting importance and the potential to drive significant energy efficiency actions at the local level. The anticipated structure for the Program's primary financing source will be loans made directly to the municipal agency through the Master Lease facility. The Program has created an administration group that is working collaboratively with the County of Los Angeles and the City of Huntington Beach to establish and define parameters for a regional effort under the name Southern California Regional Energy Center ("SoCalREC").

SoCalREC engaged an administration team comprised of The Energy Coalition, as Program Manager, Willdan Energy Services as Program Engineer, and Public Financial Management (PFM), as Program Financial Advisor. The SoCalREC team, engaged at the end of 2011, has spent the first part of 2012 identifying eligible projects and engaging the interest of local agencies throughout the region.

Projects identified as of June 2012 include over 100 "shovel ready" projects in 42 different cities throughout the region. Currently, additional assistance is being provided to establish standardized procurement documents and conformity of information related to project costs, expected savings and available incentives. Identified projects range in cost from approximately $2,000 to over $3.2 million and cover a wide range of energy efficiency improvement projects. Program projects will be submitted for

funding to Master Lease provider upon completion of a savings analysis to assure savings in excess of anticipated lease payments.

Energy projects will consist of equipment and services that reduce energy consumption or operating costs. Projects may include, but are not limited to: streetlight replacements, insulation, windows and doors, glazing, automatic energy control systems, including related hardware, improvements or retrofits to electrical lighting and auxiliary systems, heating ventilating and air conditioning (HVAC) system modifications or replacements, energy recovery systems, cogeneration systems, renewable energy systems, devices that reduce water consumption, professional and non-professional services relating to the design, installation, training and monitoring of such equipment or systems, and subject to the Lessor's approval.

This Request for Proposals ("RFP") (included as Exhibit C4) is intended to identify lessor(s) capable of providing a Master Lease facility to Program participants for energy projects that meet Program qualifications. Program project qualifications are further detailed herein. Evaluation criteria for selection of Program Lessor(s) will include funding capacity, pricing, terms and any additionally required underwriting criteria. Depending upon availability of funds and terms provided by the proposing lessors, the Program reserves the right to select a single provider, multiple providers or no providers.

The Program's initial Master Lease Agreement is requested for (i) a period commencing July 1, 2012 through December 31, 2013; and (ii) for an initial amount of $25,000,000. Upon mutual agreement of the parties, extensions may be granted for subsequent one year periods and additional $20,000,000 increments under the terms of the original Master Lease Agreement.

The Program's financing structure is intended to outline specific Subprogram project criteria for loans made to the agencies that want to fund projects. The individual agencies, at the time of their loan, will enter into a Lease Agreement in order to evidence the specific terms of borrowing and repayment for their

project(s). Respondents submitting proposals must describe their capacity to provide the services defined herein and explicitly state their ability to enter into an agreement with the County, as authorizing lessor.

Figure 22 (Subprogram B): Private Financing, Residential LLR Program

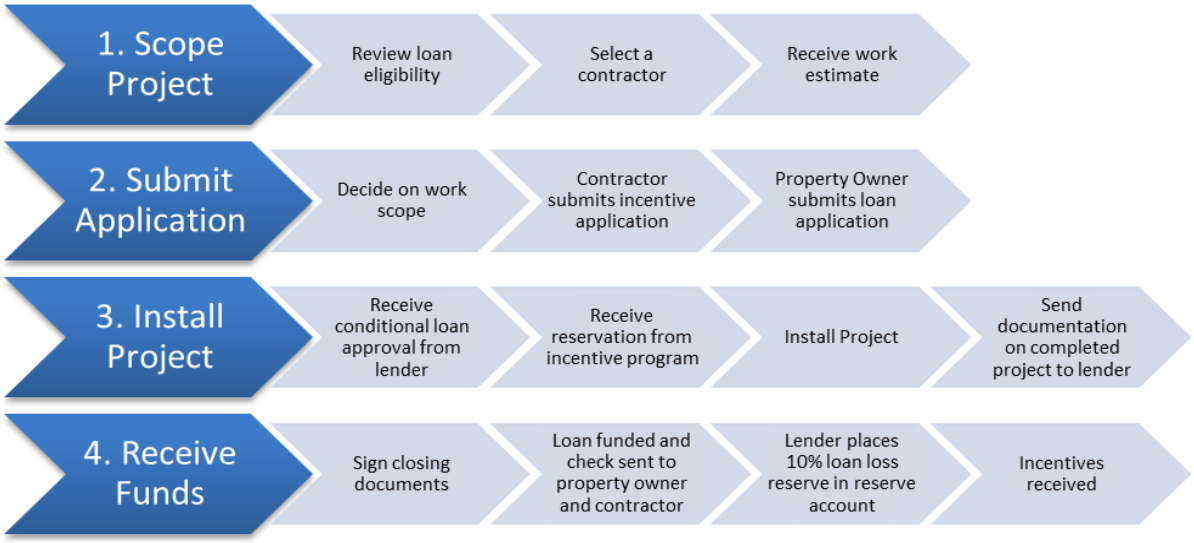
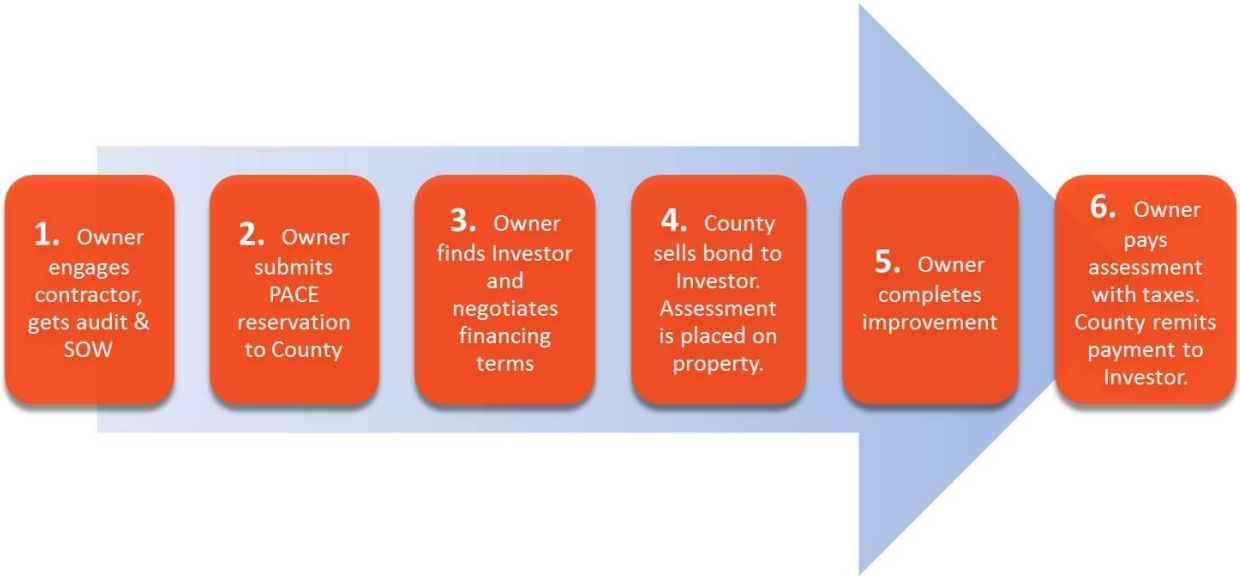


Figure 23 (Subprogram B): PACE Flow Chart



n) **Cross-cutting Sub-program and Non-IOU Partner Coordination:** Indicate other IOU EE, DR or DG sub-programs with which this sub-program will regularly coordinate. Indicate also key non-IOU coordination partners. Indicate expected coordination mechanisms[24] and frequency[25]:

Table 15 (Subprogram B): Cross-cutting Sub-program and Non-IOU Partner Coordination

Subprogram B: Financing Portfolio		
Other SoCalREN Subprograms	**Coordination Mechanism**	**Expected Frequency**
Flex Path	Project referrals	All potential projects
Advanced Path	Project referrals	All potential projects
Multi-Family	Project referrals	All potential projects
SoCalREC	Project referrals	All potential projects
IOU Program Name	**Coordination Mechanism**	**Expected Frequency**
IOU Whole House Upgrade Program (Energy Upgrade California)	Meetings, communication, participating contractor and QA updates	At least bi-monthly
Coordination Partners Outside CPUC	**Coordination Mechanism**	**Expected Frequency**
Lenders	Meetings, communication	Ongoing, as needed.

[24] "Mechanisms" refers to communication methods (i.e. quarterly meetings; internal list serves; monthly calls, etc.) and/or any cross-program review methods (i.e., feedback on program plans; sign off on policies, etc). or harmonization techniques (i.e. consistent certification requirements across programs, program participant required cross trainings, etc).

[25] This does not mean there would be mutual understanding of the on the mechanism or a known frequency of coordination; rather, just provide enough information to give a general sense of the coordinate efforts.

Local Financing Programs	Meetings, communication	Ongoing, as needed.

o) **Logic Model:** Please append the logic model for this sub-program to the end of this PIP. Describe here any additional underlying theory supporting the sub-program intervention approach, referring as needed to the relevant literature (e.g., past evaluations, best practices documents, journal articles, books, etc.).

TBD.

11) Additional Sub-Program Information

a) **Advancing Strategic Plan Goals and Objectives**: Describe how sub-program advances the goals, strategies and objectives of the California Long Term Energy Efficiency Strategic Plan (word limit: 150 words)

Figure 24 (Subprogram B): Strategic Plan Alignment

Local Government Goal 1: "Reach" codes		
Strategy Number	Strategy	
1-4	Create assessment districts or other mechanisms so property owners can fund EE through local bonds and pay back on property taxes; develop other local EE financing tools.	The SoCalREN Financing Subprogram directly advances this strategy by developing regional EE financing tools for property owners.
Local Government Goal 3: Lead by Example		
3-3	Improve access to favorable financing terms that create positive cash flow from energy efficiency/DSM savings	The SoCalREN Financing Subprogram directly advances this strategy by developing regional EE financing tools for property owners and local governments.
3-4	Promote local government adoption of policies for a budget line item for energy management or other options that allow energy efficiency cost savings to be returned to the host facility or department and/or as a revolving loan fund for additional energy projects.	The SoCalREN Financing Subprogram directly advances this strategy by developing regional revolving loan fund for local governments.
Local Government Goal 4: Community Leadership		
4-1	Local governments commit to clean energy/climate change leadership.	By establishing a regional energy efficiency Financing Portfolio, and cross-leveraging efficiency subprograms with financing subprograms, SoCalREN will create a dynamic regional energy efficiency infrastructure, with benefits that support the sustainability and climate change objectives of local governments.
4-4	Develop local projects that integrate energy efficiency, DSM, and water/wastewater end uses	The SoCalREN Financing Subprogram directly advances this strategy by developing financing programs that will integrate energy efficiency, DSM, and water/wastewater end

		uses
Local Government Goal 5: Local Government Energy Efficiency Expertise		
5-1	Create a menu of products, services, approved technologies and implementation channels to guide local governments that currently lack deep expertise in energy efficiency	The SoCalREN Financing Subprogram directly advances this strategy by developing a menu of financing products, services, approved technologies and implementation channels for local governments.
5-2	Develop model approaches to assist local governments participating in regional coordinated efforts for energy efficiency, DSM, renewables, green buildings, and zoning.	The SoCalREN Financing Subprogram directly advances this strategy by creating a regional approach that will coordinate local government efforts for energy efficiency, DSM, renewables, and green buildings.

b) Integration

i. **Integrated/coordinated Demand Side Management**: As applicable, describe how sub-program will promote customer education and sub-program participation across all DSM options. Provide budget information of non-EE sub-programs where applicable.

Table 16 (Subprogram B): Non-EE Sub-Program Information

Non-EE Subprogram	Budget	Rationale and General Approach for Integrating Across Resource Types
Water Programs	TBC	Cross promotion, integration into Financing

ii. **Integration across resource types** (energy, water, air quality, etc): If sub-program aims to integrate across resources types, please provide rationale and general approach.

Please see above for a description of cross-marketing efforts to be conducted by SoCalREN. Marketing activities and materials will promote awareness of water conservation, air quality, and other customer offerings such as those related to indoor water conservation and water efficiency.

c) **Leveraging of Resources**: Please describe if the subprogram will leverage additional investments by market actors or other state, local or federal agencies.

This Subprogram intends on leveraging all available financing tools and templates that would benefit customers.

d) **Trials/ Pilots:** Please describe any trials or pilot projects planned for this sub-program

e) **Knowledge Transfer:** Describe the strategy that will be used to identify and disseminate best practices and lessons learned from this sub-program

a. Case studies developed and disseminated
b. Assist cities to set up a revolving account and take a portion of saved funds to pay for a high profile project/highlight success
c. Highlight major success stories through media
d. Draft news and journal articles on city energy savings
e. Presentations and participation in conferences to share success/best practices/lessons learned

Please see Exhibit C2 for sample collateral such as newsletters, website screen shot, etc.

12) **Market Transformation Information**: For programs identified as market transformation programs, include the following (suggested page limit- five pages):

i. A summary of the market transformation objectives of the program.
ii. A description of the market, including identification of the relevant market actors and the relationships among them;
iii. A market characterization and assessment of the relationships/dynamics among market actors, including identification of the key barriers and opportunities to advance demand side management technologies and strategies;
iv. A description of the proposed intervention(s) and its/their intended results, and specify which barriers the intervention is intended to address;
v. A coherent program, or "market," logic model that ensures a solid causal relationship between the proposed intervention(s) and its/their intended results[26];
vi. Appropriate evaluation plans and corresponding Market Transformation indicators and Program Performance Metrics based on the program logic model.

Not applicable.

13) **Additional information as required by Commission decision or ruling or as needed:** Include here additional information as required by Commission decision or ruling (As applicable. Indicate decision or ruling and page numbers):

[26] If this logic model is the same as that requested in #10.(O), only provide once. As needed, provide a more detailed logic model emphasizing the market transformation elements of the program and/or how such elements integrate with resource acquisition elements.

Exhibit B1: Tables

Exhibit B2: Financing E3 calculations – Due to file size, please download at:

https://drive.google.com/folderview?id=0B-geqhnadhYHLUR6dEVMRVZMVkE&usp=sharing

This page left intentionally blank.

2013-2014 Energy Efficiency Programs
Southern California Regional Energy Network
Program Implementation Plan

1) **Sub-Program Name:**

Subprogram C: Continue and Expand the Southern California Regional Energy Center (SoCalREC)

Pilot to the entire Southern California Region

2) **Sub-Program ID number: _____**
3) **Type of Sub-Program: __Core X__Third Party __Partnership**
4) **Market sector or segment that this sub-program is designed to serve[27]:**

   a. __ Residential
      i. Including Low Income? __ Yes __ No;
      ii. Including Moderate Income? __ Yes __ No.
      iii. Including or specifically Multifamily buildings __ Yes __ No.
      iv. Including or specifically Rental units? __ Yes __ No.
   b. _X_ Commercial (List applicable NAIC codes: _ All Municipal codes__)
   c. __ Industrial (List applicable NAIC codes: _____)
   d. __ Agricultural (List applicable NAIC codes: _____)

5) **Is this sub-program primarily a:**
   a. Non-resource program ___ Yes__ No
   b. Resource acquisition program _X_ Yes ___ No
   c. Market Transformation Program ___ Yes ___ No

6) **Indicate the primary intervention strategies:**
   a. Upstream ___ Yes ___ No
   b. Midstream ___ Yes ___ No
   c. Downstream _X_ Yes ___ No
   d. Direct Install __ Yes __ No
   e. Non Resource __ Yes __ No

[27] Check all that apply

7) Projected Sub-program Total Resource Cost (TRC) and Program Administrator Cost (PAC)

ELECTRI: TRC 0.70 PAC 1.55
GAS TRC 1.20 PAC 1.57

8) Projected Sub-Program Budget

Table 1 - Electric (Subprogram C): Projected Sub-Program Budget, by Calendar Year[28]

	Program Year		
Sub-Program C: SoCalREC	**2013**	**2014**	**Total**
Admin ($)	548,226	548,226	1,096,452
General overhead ($)	0	0	0
Incentives ($)	0	0	0
Direct Install Non-Incentives ($)	6,510,508	6,510,508	13,021,016
Marketing & Outreach ($)	484,629	484,629	969,257
Education & Training	0	0	0
Total Budget	**7,543,363**	**7,543,363**	**15,086,725**

Table 2 - Gas (Subprogram C): Projected Sub-Program Budget, by Calendar Year[29]

	Program Year		
Sub-Program C: SoCalREC	**2013**	**2014**	**Total**

[28] Individual utility specific information to be provided in this table

[29] Individual utility specific information to be provided in this table

Admin ($)	54,507	54,507	109,015
General overhead ($)	0	0	0
Incentives ($)	0	0	0
Direct Install Non-Incentives ($)	647,308	647,308	1,294,617
Marketing & Outreach ($)	48,184	48,184	96,369
Education & Training	0	0	0
Total Budget	**750,000**	**750,000**	**1,500,000**

Table 3 - Combo (Subprogram C): Projected Sub-Program Budget, by Calendar Year[30]

	Program Year		
Sub-Program C: SoCalREC	**2013**	**2014**	**Total**
Admin ($)	602,733	602,733	1,205,467
General overhead ($)	0	0	0
Incentives ($)	0	0	0
Direct Install Non-Incentives ($)	7,157,816	7,157,816	14,315,633
Marketing & Outreach ($)	532,813	532,813	1,065,626
Education & Training	0	0	0
Total Budget	**8,293,363**	**8,293,363**	**16,586,725**

[30] Individual utility specific information to be provided in this table

9) Sub-Program Description, Objectives and Theory

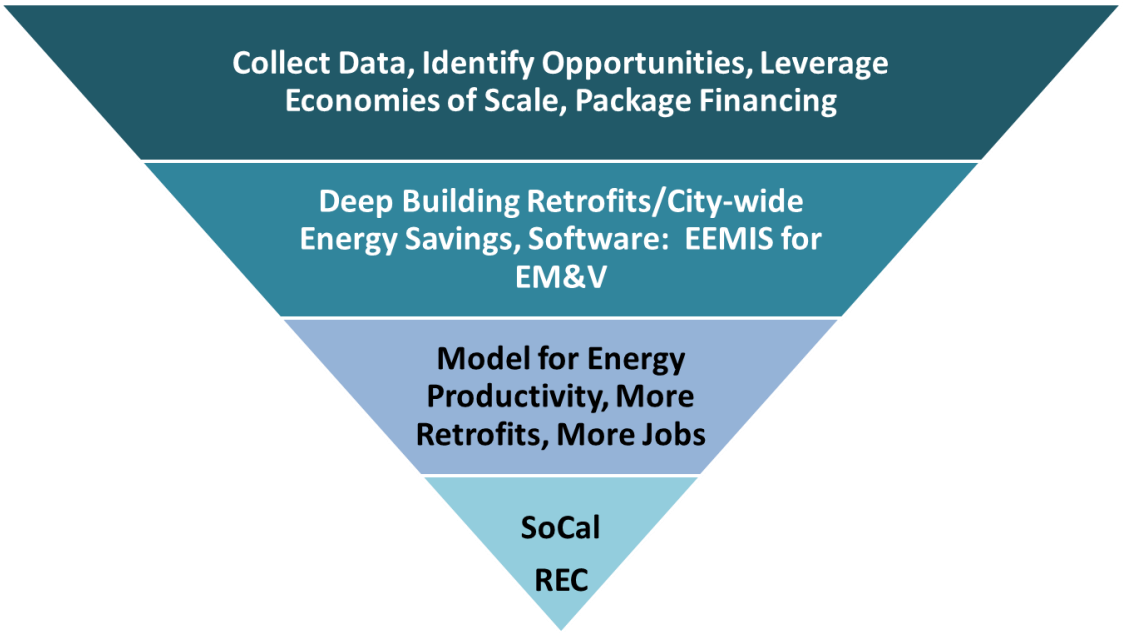
a) Sub-Program Description and Theory:

The Southern California Regional Energy Network (SoCalREN) will expand Southern California Regional Energy Center (SoCalREC) activities that were piloted under SCE Flight 5.6 and EECBG funding to all participating jurisdictions in the Southern California region. SoCalREC is a local government pilot project launched by Los Angeles County and the City of Huntington Beach that will end in 2012. The SoCalREC pilot demonstrates how Los Angeles County, in conjunction with numerous participating cities, counties and local government partnerships, can work together under a regionally-focused program to facilitate a broader regional energy reach in Southern California and dramatically increase energy efficiency in local governments and local communities. SoCalREC already has 55 local government partners and has identified over $20 million in previously untapped municipal facility projects for potential implementation under a creative, aggregated regional financing program. Its primary focus, and ultimately that of the proposed SoCalREN, is to demonstrate how joint actions by a broad group of engaged cities can add value to and work in concert with existing Local Government Partnerships and significantly expand the innovative implementation of cost-effective energy efficiency projects. The SoCalREC provides a credible and feasible plan to achieve Goal 5 of the CEESP: local government energy efficiency expertise becomes widespread and typical.

The SoCalREC team will access untapped and underserved markets to drive greater reductions in energy use, create jobs and prudently invest ratepayer funds for significant energy management benefits in local communities. SoCalREC will be instrumental in driving the energy services marketplace from an over reliance on sole source approaches to a more competitive selection and contract award process based on

best value for end users through greater use of standard terms and conditions and value pricing. Very significantly, SoCalREC will also serve jurisdictions in the region that are not presently involved in an LGP program as well as work closely with the current IOU local government partnership programs to ensure complementary program delivery and leveraged resources without duplicating efforts..

Figure 25 (Subprogram C): The SoCalREC Big Picture



For the 2013-2014 transition period, specific program elements and services of the SoCalREC will be primarily focused in the following six (6) functional areas. SoCalREC budget is a combined budget for all components in the amount of $16,586,725.

C1: Regional procurement program that develops and implements aggregated purchase, acquisition and management for energy projects, services and equipment - $6,711,540

- Identify projects that are suitable for aggregate purchasing strategies, i.e. street light retrofits, VFDs on municipal pool pumps, efficient lighting and HVAC systems, etc.

- Facilitate collective procurement processes by developing RFQ, RFP and other project bidding and contracting templates as well as evaluation expertise and assistance for review of proposals and bid submittals aimed at creating a short list of approved vendors with negotiated pricing, simplifying the process for public agencies to utilize.
- Coordinate cost-effective procurement activities and project management/implementation approaches across all participating jurisdictions.
- Create templates and approaches for restructuring of basic service approaches for infrastructure assets described above to identify comprehensive solutions that address combined energy, operations and maintenance needs.
- Prepare meaningful and straightforward case studies that not only present 'best practices' and accomplishments by the SoCalREC and participating SoCalREC jurisdictions, but also clearly explain the challenges, pitfalls and barriers that were confronted and overcome in the process. These case studies will be disseminated both within the SoCalREC and more widely to other cities and counties throughout the state.

C2: Integrated and comprehensive retrofits to develop high performance buildings and infrastructure for municipalities in the SoCalREN region - $6,655,532

- Develop a building energy/resource consumption database for facility benchmarking and application of building rating systems.
- Implement an Enterprise Energy Management Information System (EEMIS) for public buildings and facilities that automates and expedites large portions of energy project identification and development on a shared platform, such as the LA County EEMIS.
    - Provide EEMIS training and overall administration.
    - Provide EEMIS access to a number of both public and private buildings within the region.
    - Coordinate information from other Utility Manager Systems used by other jurisdictions with EEMIS information.
- Design and implement a searchable web-based energy mapping system that lists local government energy efficiency project details including summaries for kWh and therm savings totals both within jurisdictions and across the region.
- Provide energy project development and management services.

    - Provide technical evaluation and analysis resources, project procurement and management services which "fill the gaps" in existing offerings.
    - Provide high quality energy analysis including technical investment level audits and evaluations for public facilities that "fill the gaps" in existing offerings.
    - Tap expertise of a technical advisory group to identify best practices and appropriate technology for municipal energy projects which can be used for comprehensive retrofits or as an aggregated procurement measure.
- Provide centralized and standardized project management services.
    - Create standard forms, templates and documents for project specifications, procurement processes, contracting and project/construction management.
    - Provide a centralized and accessible online collaborative virtual workspace (such as Microsoft Sharepoint) and online library for development and dissemination of shared tools and templates that provides a very basic starting point for interested users.
    - Focus on pre-packaged measures and procurement services and coordinate multiple and simultaneous projects within and between jurisdictions to achieve economies of scale.
- Implement integrated energy efficiency projects and comprehensive retrofit that incorporate all feasible and cost-effective IDSM measures and approaches
    - Include a focus on additional opportunities for streetlighting retrofits, Retro-commissioning, public facility projects with special districts such as water and schools, changing energy management behaviors and other energy use reduction opportunities.
- Evaluate and implement, where appropriate, coordinated demand-response protocols and action plans for public buildings and facilities that can be mobilized during peak energy demand events. Leverage these programs with existing and emerging energy emergency plans.

- Integrate and coordinate energy upgrade work within public facilities to avoid redundant and counterproductive work steps and achieve streamlined, standardized and optimized results.

C3: Using completed city and Council of Governments (COG) plans and work accomplished by the LARC under ARRA funding as a starting point, provide support for development of regional

collaborative climate action plans and tracking/reporting that increase reductions in GHGs - $790,240

The Los Angeles region has long been known as a "fragmented metropolis," with geographic size and jurisdictional rivalries preventing integrated planning and cooperation. The Los Angeles Regional Collaborative for Climate Action and Sustainability (LARC) represents a sea change in the region, creating a forum for local governments, districts, agencies, universities and the private sector to collaborate to address a critical issue of the 21st century: climate change. LARC members include the County of Los Angeles, City of Los Angeles, LA County Metro, Santa Monica, South Bay Cities COG, and others, and these members have tasked LARC with coordinating regional climate action and sustainability strategies.Los Angeles County Metropolitan Transportation Authority (Lead on Joint Proposal)

Combined with ARRA funding and a California Strategic Growth Council Grant, CPUC funding will support the completion of the LARC county-wide climate action and sustainability plan, called "A Greater L.A.: the Framework for Regional Climate Action and Sustainability" (Framework) including these specific Tasks:

Regional Climate Change and Sustainability Strategies Compendium:

LARC will complete an inventory of best management practices (BMPs) and an assessment of barriers and opportunities to implementation in Los Angeles County communities. We will also analyze the appropriateness of each strategy to LA-area communities, their impact on core goals including greenhouse gas (GHG) emissions reductions and adaptation planning, the value to stakeholders, and economic impact of each strategy/BMP. This will include the construction of a generalized indicator and impact analysis framework for use in municipalities throughout the state. The compendium will tie into existing efforts including state and SCAG databases and various statewide regulatory plans and requirements. CPUC funding will support electricity and natural gas focused activities only.

Local Implementation Measures/Model Ordinance:

This document will offer an implementing tool for cities to adopt locally appropriate, regionally integrated climate action policies and land use regulations that address the broader GHG emission reduction, transportation, water, and energy efficiency goals of SB375 and AB32. The ordinance will offer suite a suite of regulations and strategies such as sustainable planning for transit oriented districts, elements of Low Impact Design and LEED-Neighborhood Design, to name a few. The Model Ordinance will be accompanied by a series of technical memos that offer a legal overview and economic and environmental impacts to support cities in policy adoption.

The Final Framework, "A Greater L.A.":

These documents will be developed through a comprehensive stakeholder outreach and engagement program, and once completed will be shared through educational workshops, outreach, and an online platform. The outreach plan includes technical assistance to cities to ensure the use of the model ordinances, inter-jurisdictional work, and regional planning elements. Cities will be offered an active set of workshops and trainings, as well as detailed evaluation of the use and effectiveness of policies to support adoption efforts. By providing best practices and coordination for the entire County, the Framework will also allow economically disadvantaged communities to benefit from coordinated planning, inclusion in Framework development, and leveraged capacity in order to meet the Framework's community goals.

This document will provide regional policy direction, coordinated strategic planning, and relevant policy/ordinance/BMP resources for local governments. It will draw upon the county-wide GHG inventory and mitigation strategies study currently underway as well as the downscaled climate change simulation being completed for adaptation planning, among other regional plans.

LARC has already secured over $1 million of funding to develop the scientific basis for climate and sustainability planning across this diverse region of 10 million people. This works includes a county-wide GHG emissions inventory, climate adaptation modeling, sustainable energy systems research, and stakeholder working groups. This grant will leverage these projects and add critical planning tools to create an actionable plan for combating climate change and reducing greenhouse gas emissions region-wide. Through extensive outreach and stakeholder engagement, collaborative strategy development, and the provision of implementable model policies and technical assistance, the Framework will mobilize regional entities to reach the goal of creating sustainable communities county-wide.

C4: Integration of the water-energy nexus in selected program offerings - $507,787 Design and implement, in coordination with municipal, regional and private water agencies, an integrated program to capture energy savings from water system operations, building upgrades and community-wide education and water-energy behavior change programs and strategies. Develop linkages among methodologies for capturing the energy efficiency impacts from embedded energy in potable water systems.

C5: Coordination of region-wide municipal implementation and training on a community energy efficiency project management system (CEEPMS) - $277,470

- Provide public agency staff with the ability to identify and track community-wide energy efficiency projects processed through online permit systems to assist in reporting overall public agency energy savings and GHG emissions.
- Provide permit applicants (homeowners, business owners or contractors) with the latest rebate information and efficiency program eligibility requirement based on the energy efficiency (EE) improvements noted in the permit application.
- Provide 'energy neutral' information outreach to all customers to leverage IOU, publically owned utility (POU) and water utility rebates and resources.

C6: Workforce Development - $300,000

The County agreed with comments made by the California Construction Industry Labor Management Cooperation Trust (Trust) that energy efficiency portfolio proposals did not adequately address development of training and employment opportunities for minority, low-income and disadvantaged workers. The County proposed to develop a pilot training program within the SoCalREC proposal to connect and coordinate labor resources from local job training groups that assist minorities, low-income and disadvantaged workers. The CPUC approved the pilot training program if it could be funded out of the approved budget. The activities to be conducted are described below.

- Identify the need/demand for labor in non-residential building sectors, primarily the Municipal, University, School, Hospital (MUSH) sector.
- Identify and connect training and pre-apprenticeship resources with potential labor pools.
- Establish linkages with existing registered apprenticeship programs. .
- Develop and deploy standard contract language for contractor selection that includes local hiring, support for state-certified apprenticeship programs, and job quality standards.
- Develop small contractor procurement opportunities and skill development in the MUSH market.
- Develop a research protocol/program to assess outcomes
- Develop a proposal to scale up the pilot during the 2013-2014 implementation period and in planning for the next energy efficiency program cycle.
- The pilot, and the potential scaling up of the pilot, will explore and leverage the unique expertise and resources of the SoCalREN local governments and workforce stakeholders, which emphasize opportunities for minority, low-income and disadvantaged workers and the value of local hiring practices.

END OF DESCRIPTION OF SUBPROGRAM C: SOCALREC

b) **Sub-Program Energy and Demand Objectives**- If this sub-program has energy and demand objective, please complete Table 2.

Table 2 (Subprogram C). Projected Sub-Program Net Energy and Demand Impacts, by Calendar Year[31]

	Program Years		
	2013	**2014**	**Total**
Sub-program C: SoCalREC			
GWh	15.1 (17.3 gross)	10.7 (12.4 gross)	25.8 (29.7) gross)
Peak MW	8.7 (12.0 gross)	5.9 (8.1 gross)	14.6 (20.1 gross)
Therms (millions)	0.13 (0.22 gross)	0.11 (0.18 gross)	0.24 (0.40 gross)

c) **Program Non-Energy Objectives**:

- Participating jurisdictions will receive the following: SoCalREN templates and guidebooks for project management and financing, case studies that highlight best practices and report definitive actions and accomplishments of SoCalREN and participating jurisdictions.
- Participating cities will receive information about the collective aggregate procurement process.
- Participating jurisdictions will be trained in subject matters including, but not limited to: aggregated procurement process, EEMIS facility management software system, use of SoCalREN templates for project management and financing, an online permit tracking system for participating cities to enable capturing and reporting overall energy savings and GHG emissions (CEEPMS)
- Participating cities will receive information about the following tools: a building energy/resource consumption database for facility benchmarking and application of building rating systems, a web based energy mapping system that lists local government energy efficiency project details including summaries for kWh and term savings totals both within jurisdictions and across regions

[31] Individual utility specific information to be provided in this table

Table 3 (Subprogram C): Quantitative Subprogram Targets (PPMs)

Target	2013	2014
Number of buildings treated	7	8
Number of units incented or rebated	7	8

d) **Cost Effectiveness/Market Need**: What methods will be or have been used to determine whether this program is cost-effective?[32] If this is a non-resource program, describe the literature, market assessments or other sources that indicate a need for this program.

Methods contained in the current and revised Standard Practice Manual will be followed. The measure "Whole Facility Upgrades" is a comprehensive *green* or *sustainable* measure designed to reduce energy and water use, and greenhouse gas emissions. It involves investigating an existing building's operations to identify potential improvements in equipment and operations (beyond normal maintenance and standard retrofits) to achieve lower utility bills.

- System Approach—high efficiency chillers
- Lighting power density reduction
- Daylighting and controls
- System Approach—premium efficiency motors
- System Approach—HVAC energy reduction (such as changing from constant air volume double-duct to variable air volume double-duct air handling systems, implementing airside economizers, etc.)

e) **Measure Savings/ Work Papers**:

[32] If the program has energy and demand objectives, simply state that the methods contained in the Standard Practice Manual will be used. If the program does not have energy and demand objective, propose an approach to assess cost-effectiveness.

a. Indicate data source for savings estimates for program measures (DEER, custom measures, etc).

The Database for Energy Efficient Resources (DEER) contains both new construction and retrofit energy efficiency measures in the database. However, "Whole Facility Upgrades" measures are actually bundled measure components with interactive effects. This bundled measure category represents custom calculated measures and is not represented in the DEER database.

Measures, energy savings, and demand reduction are highly building specific and project specific. Although there are certain "standard" types of equipment and system configurations, HVAC and lighting systems in larger buildings are unique and tailored for specific building occupancy and operating schedules, orientation, climate zone, interactive effects, etc. Deemed savings do not apply for these applications.

The measures summarized in this Work Paper encompass a more diverse set of equipment than what the DEER contains, and the savings estimates are based on site specific base case equipment, measures, and operating parameters. There are however, relevant SCE Work Papers to cite. (These documents are embedded in the References list.)

b. Indicate work paper status for program measures:

Table 4 (Subprogram C) – Work paper Status

#	Workpaper Number/Measure Name	Approved	Pending Approval	Submitted but Awaiting Review
	GENERAL LIGHTING			
1	Street lighting (LS1 to LS2 conversion)		X	
2	Outdoor lighting (parks, parking structures)		X	
	INTERSECTION LIGHTING			

3	Traffic signal		X	
4	Safety lights (street light)		X	
5	Street signs		X	
6	Walk signal		X	
	PUMPS			
7	Pool pumps		X	
8	Other pumps		X	
	WHOLE BUILDING DEEP RETROFITS			
9	Detailed list of measures included in E3 Calcs. Please see Exhibit C1.		X	

10) Program Implementation Details

a. **Timelines:** List the key program milestones and dates. An example is included below.

Table 5 (Subprogram C):. Sub-Program Milestones and Timeline

Milestone	Date
Project Initiation Meeting	Feb 2013
Draft Work Plan for program	Mar, 2013
Draft separate Work Plan for each Objective	Apr, 2013
Draft separate Implementation Plan for each Objective	May. 2013
Expand templates and guidebooks to entire region	Mar - Jun, 2013
Disseminate information to local governments	Feb, 2013-Dec, 2014
Begin Program Implementation	Apr, 2013
Quarterly Progress Reports	Apr, July, Oct. 2013/ Feb, May, Sept, 2014
Quarterly Newsletter	Mar, June, Sept, Dec, 2013/ 2014
Bi-annual workshop on technologies aggregating	Jun, 2013/Nov, 2013/Mar, 2014/Sept, 2014

Annual joint conference with IOUs to complement Local Government Partnership Program	Apr, 2013/Apr. 2014
Annual update to Implementation Plan reflecting changes to strategy	Feb, 2014
Final report of pilot	Dec, 2014

b. **Geographic Scope**: List the geographic regions (e.g., CEC weather zones) where the program will operate

Table 6 (Subprogram C): Geographic Regions Where the Program Will Operate

Geographic Region	Subprogram C: SoCalREC
CEC Climate Zone 1	
CEC Climate Zone 2	
CEC Climate Zone 3	
CEC Climate Zone 4	
CEC Climate Zone 5	X
CEC Climate Zone 6	X
CEC Climate Zone 7	X
CEC Climate Zone 8	X
CEC Climate Zone 9	X
CEC Climate Zone 10	X
CEC Climate Zone 11	
CEC Climate Zone 12	
CEC Climate Zone 13	X
CEC Climate Zone 14	X

CEC Climate Zone 15	X
CEC Climate Zone 16	X

c. Program Administration

Table 7 (Subprogram C): Program Administration of Program Components

Subprogram Name	Subprogram Component	Implemented by IOU staff (X = Yes)	Implemented by contractors to be selected by competitive bid process	Implemented by contractors NOT selected by competitive bid process	Implemented by local government or other entity (X = Yes)
SoCalREC	1: Regional Procurement				X (LA County)
	2: Deep Level Retrofits				X (LA County)
	3: Climate Action Support				X (LA County)
	4: Water-Energy Nexus				X (LA County)
	5: CEEPMS				X (LA County)
	1. Workforce Development				X (LA County)

d. Program Eligibility Requirements:

i. Customers: List any customer eligibility requirements (e.g., annual energy use, peak kW demand):

Table 8 (Subprogram C): Customer Eligibility Requirements

Customer Eligibility Requirement	IOUs
Regional procurement: Public agency must be located in IOU service territory.	X
Deep level retrofits: Public agency must be located in IOU service territory.	X
Climate action support: Public agency must be located in IOU service territory.	X
Water-Energy Nexus: Public agency must be located in IOU service territory.	X
CEEPMS: Public agency must be located in IOU service territory.	X
Workforce Development: Public agency must be located in IOU service territory	X

ii. **Contractors/Participants:** List any contractor (and/or developer, manufacturer, retailer or other "participant") eligibility requirements (e.g. specific IOU required trainings; specific contractor accreditations; and/or, specific technician certifications required).

Table 9 (Subprogram C): Contractor/Participant Eligibility Requirements

Contractor Eligibility Requirement	IOUs
Regional procurement	None
Deep level retrofits	None
Climate action support	None
Water-Energy Nexus	None
CEEPMS	None
Workforce Development	None

e. **Program Partners:**

a. **Manufacturer/Retailer/Distributor partners:** For upstream or midstream incentive and/or buy down programs indicate[33]:

[33] Provide in a consistent format for all IOUs. Indicate program partners across all IOU territories in one table or spreadsheet.

Append to end of PIP.

Table 10 (Subprogram C): Manufacturer/Retailer/Distributor Partners

Manufacturer/Retailer/Distributor Partner Information	IOU
Manufacturers enrolled in program	None
Manufacturers targeted for enrollment in program	None
Retailers enrolled in program	None
Retailers targeted for enrollment in program	None
Distributors enrolled in program	None
Distributors targeted for enrollment in program	None

b. **Other key program partners**: Indicate any research or other key program partners:

Other key program partners include the following:

- Los Angeles Department of Water and Power
- Los Angeles Regional Collaborative (LARC)
- City of Los Angeles
- University of California Los Angeles Institute of Environment and Sustainability
- Long Beach Gas & Oil
- Pasadena Water & Power
- Glendale Water & Power
- Azusa Light & Water
- City of Vernon Light & Power
- Anaheim Municipal Utility District
- Moreno Valley Electric Utility
- City of Corona Department of Water & Power
- City of Riverside Public Utilities
- Santa Ana Watershed Project Authority
- Irvine Ranch Water District
- Metropolitan Water District
- Southern California Association of Governments (SCAG)
- Southern California Air Quality Management District (SCAQMD)

f) **Measures and incentive levels**: E3 calculators will provide the list of measures and incentive levels to be provided via the program. In this section the utilities should provide a summary table of measures and incentive levels.

Table 11 (Subprogram C): Summary Table of Measures, Incentive Levels and Verification Rates

Measure Group	Market Actor Receiving Incentive or Rebate	IOU	
		Incentive Level	Installation Sampling Rate
GENERAL LIGHTING			
Street lighting (LS1 to LS2 conversion)	Local government	Current IOU offering	Per IOU QA Standards
Outdoor lighting (parks, parking structures)	Local government	Current IOU offering	Per IOU QA Standards
INTERSECTION LIGHTING			
Traffic signal	Local government	Current IOU offering	Per IOU QA Standards
Safety lights (street light)	Local government	Current IOU offering	Per IOU QA Standards
Street signs	Local government	Current IOU offering	Per IOU QA Standards
Walk signal	Local government	Current IOU offering	Per IOU QA Standards
PUMPS			
Pool pumps	Local government	Current IOU offering	Per IOU QA Standards
Other pumps	Local government	Current IOU offering	Per IOU QA Standards
WHOLE BUILDING DEEP RETROFITS			
Detailed list of Measures included in E3 Calcs (Please see Exhibit C5)	Local government	Current IOU offering	Per IOU QA Standards

a. Use a single excel spreadsheet to indicate the eligible measures for the program across all IOUs. Indicate the expected incentive level by measure or measure grouping for each IOU, making clear where these vary.
b. For each incented or rebated measure, indicate the market actor to whom this will be provided.

g) **Additional Services:** List additional services that the sub-program will provide, to which market actors.

a. For each service provided, indicate any expected charges to market actors of the services, and/or the level at which any such services will be incented or funded.

Table 12 (Subprogram C): Additional Services

Additional Services that the Sub-Program Will Provide	To Which Market Actors	IOU
TBD		

Not applicable.

h) **Sub-Program Specific Marketing and Outreach:** Please describe, providing timelines (suggested word limit: 300 words)

The goal of marketing and outreach for the SoCalREC program will be to educate and engage cities in the program offerings and opportunities. In order to accomplish this, public agencies will be directed to a SoCalREC website, housed within the REN general web portal that provides information about the various program offerings, technical assistance resources, aggregate procurement opportunities, a regionwide energy mapping system, and financing. A password protected online resource library will provide participating jurisdictions with access to tools, templates, guidebooks and other relevant information developed as part of the pilot. Participating jurisdictions will receive bi-monthly e-newsletters with up-to-date information about activities, best practices, case studies and relevant information on SoCalREC resources. In addition, SoCalREC will host four workshops and coordinate joint IOU meetings to encourage dialogue about implementation and lessons learned. Marketing materials will also be developed to distribute at community events, expos and other public participation venues.

SoCalREC will also support municipalities who participate in a SoCalREC project with communicating their successes to their community and other SoCalREC cities in coordination with IOU LGP programs. Once energy efficiency improvement measures have been implemented by a City, energy and cost savings data will be compiled and shared with local and regional media outlets, relevant social media

channels (if present), and community marketing vehicles such as a City's newsletter and website. The traditional and grassroots public relations and marketing messaging will aim at sharing the story of the City's fiscally responsible endeavors through the successful implementation of energy reduction measures. Saving energy and money creates savings for the entire community. This public benefit will ideally have board appeal to media outlets as well as the community at large.

The timelines for these marketing efforts are included in Table 5.

i) **Sub-Program Specific Training:** Please describe, providing timelines (suggested word limit: 300 words)

During the first half of 2013, SoCalREC will host workshops jointly with the IOUs for cities to learn about SoCalREC opportunities and program offerings. This will include information about the benefits and opportunities for aggregated procurement and implementation, financing, and shared technical assistance. In addition, training will be provided to building managers in participating cities in the following areas, using tools and templates developed for the project:

- Data collection process
- Building audit process
- Benchmarking
- EEMIS system and overall administration

j) **Sub-Program Software and/or Additional Tools:**

a. List all eligible software or similar tools required for sub-program participation.
b. Indicate if pre and/or post implementation audits will be required for the sub-program.
   Pre-implementation audit required ___ Yes _X_ No
   Post-implementation audit required ___ Yes _X_ No
c. As applicable, indicate levels at which such audits shall be rebated or funded, and to whom such rebates/funding will be provided (i.e. to customer or contractor).

Table 13 (Subprogram C): Post-implementation Audits

Levels at Which Program Related Audits Are Rebated or Funded	Who Receives the Rebate/Funding (Customer or Contractor)
Not applicable. Will be covered through post-inspections from IOUs.	Can be designated to either.

k) Sub-Program Quality Assurance Provisions: Please list quality assurance, quality control, including accreditations/certification or other credentials

Table 14 (Subprogram C): Quality Assurance Provisions

QA Requirements	QA Sampling Rate (Indicate Pre/Post Sample)	QA Personnel Certification Requirements
Not applicable. Relying on existing IOU rebate processing for realizing of energy savings.	NA.	NA.

l) **Sub-program Delivery Method and Measure Installation /Marketing or Training:** Briefly describe any additional sub-program delivery and measure installation and/or marketing & outreach, training and/or other services provided, if not yet described above.

Overall Strategy

- Engage jurisdictions within the SoCalREN service area (cities, COGs, LGPs)
    - Host regional workshops with SCE/SCG
    - Send invitation memo to jurisdictions outlining SoCalREN opportunities
    - Develop outreach strategy to inform/educate/engage participating jurisdictions

- Design and Disseminate Tools, Templates, Processes
    - Develop and disseminate guide books for participating jurisdictions to use or request assistance filling out
    - Develop and disseminate templates for project management and financing to 100% of participating jurisdictions
        - RFQ, RFP and other bidding and contracting templates
        - Standard forms, documents for project specifications, procurement processes, contracting and project/construction management
    - Design and implement website, on-line resource library

- Collect Data and Identify Eligible Jurisdictions/Projects
    - Identify participating jurisdictions
    - Disseminate data collection tools
    - Support data collection efforts
    - Identify eligible projects for collective procurement and/or whole building retrofits
- Identify pooled technology project opportunities. Technologies include, but are not limited to:
    - Streetlight retrofits (LED or induction- LS2/LS3s)
    - Pool Pump VFD replacement
    - Signal lights/intersection packages
    - Other outdoor lighting
    - HVAC Package units

- Identify whole building retrofits- selected demonstration projects in each participating County
    - Identify potential target buildings (200 kW or larger)
    - Benchmark building performance using EEMIS or EPA Portfolio Manager
    - Obtain 12-36 month billing information for each building
    - Complete technical assistance form for each building
    - Confirm eligibility through preliminary analysis
    - Coordinate and perform audit
    - Look for water efficiency savings and relative incentives
    - Identify demand response opportunities
- Cross promote renewable energy programs and opportunities Develop Aggregate Project Opportunities
    - Obtain interest list from participating public agencies Develop RFP/RFQ solicitation process, bidding
    - Transparent procurement and evaluation/selection process
    - Coordinate short list vendors Provide pro-formas and business case scenarios for cities allowing them to understand the “deal” before committing to implement

- Identify Attractive Financing

- Qualify SoCalREC identified projects for financing through the public agency master lease financing
- Coordinate with other financing programs including, but not limited to: IOU OBF, CEC loan, ESCO financing, other private equity financing

- Implement projects
  - Assist participating cities with project implementation technical assistance, as needed, including identification of technical assistance resources
  - Coordinate with IOU programs, funneling all energy savings opportunities through their incentive programs in order to capture the appropriate energy savings
  - Coordinate procurement using a centralized, standardized process with tools and templates.
  - Reporting
  - Integrate energy project and savings information in to existing on-line energy mapping system
  - Post implementation EM&V
  - Warranty rectification assistance if needed through short list vendors

m) Sub-program Process Flow Chart: Provide a sub-program process flow chart that describes the administrative and procedural components of the sub-program. For example, the flow chart might describe a customer's submittal of an application, the screening of the application, the approval/disapproval of an application, verification of purchase or installation, the processing and payment of incentives, and any quality control activities.

Figure 26 (Subprogram C): Enterprise Energy Management Information System (EEMIS) Flow Chart

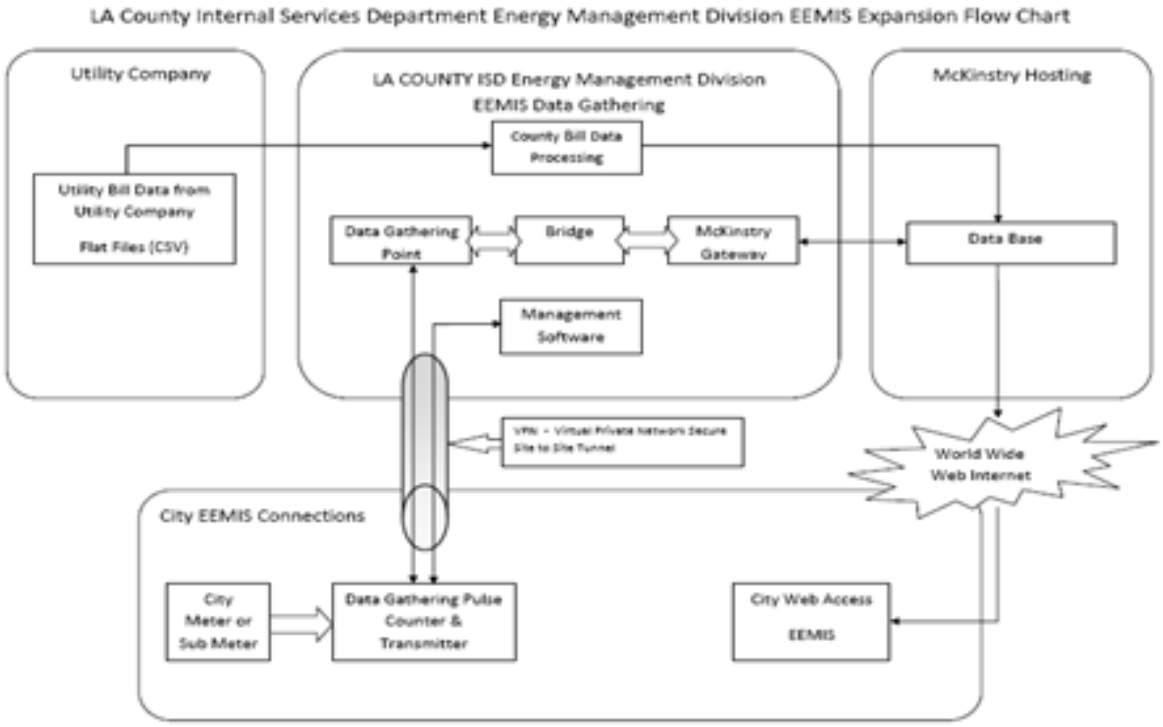


Figure 27 (Subprogram C): Community Energy Efficiency Program Management System (CEEPMS)

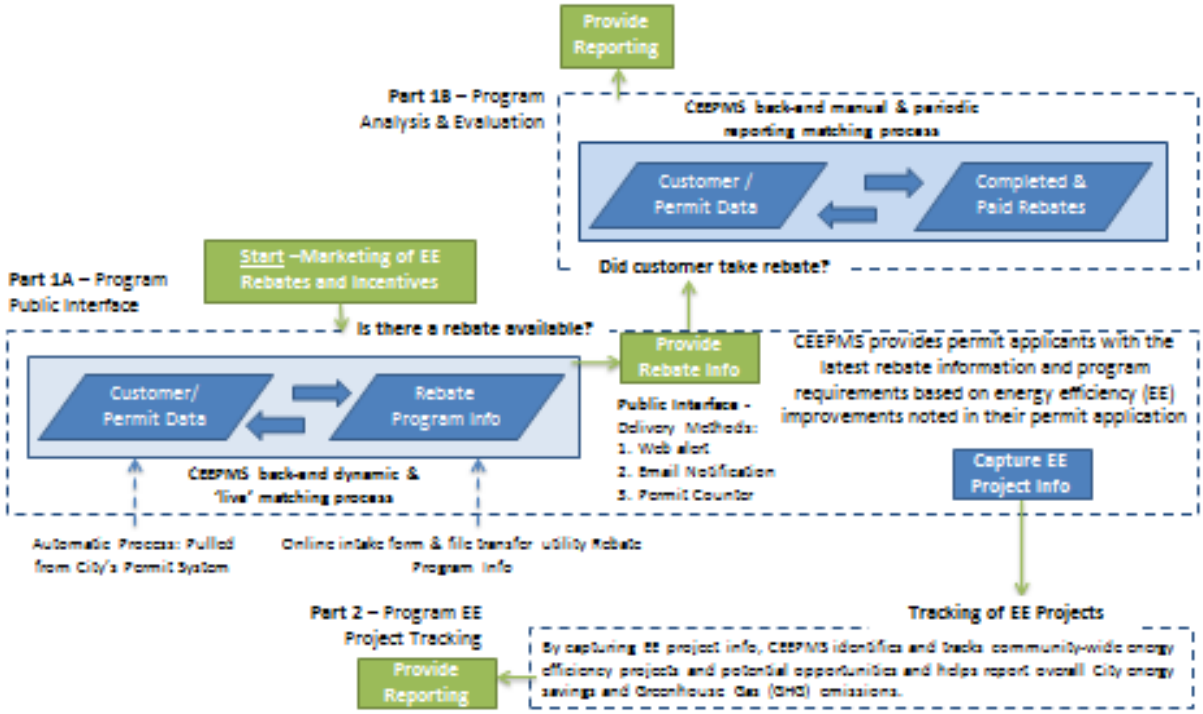


Figure 28 (Subprogram C): SoCalREC Flow Charts

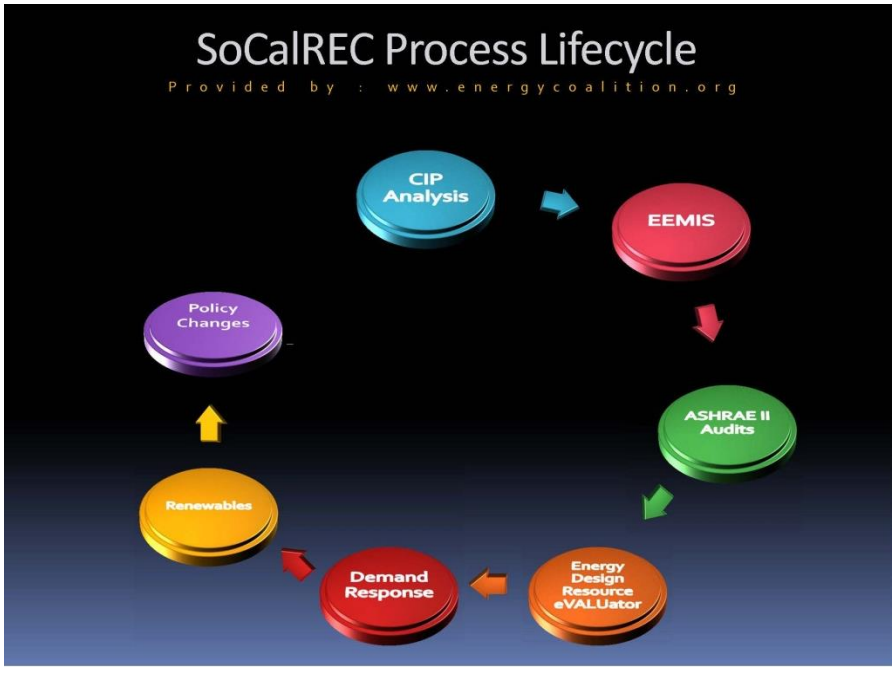
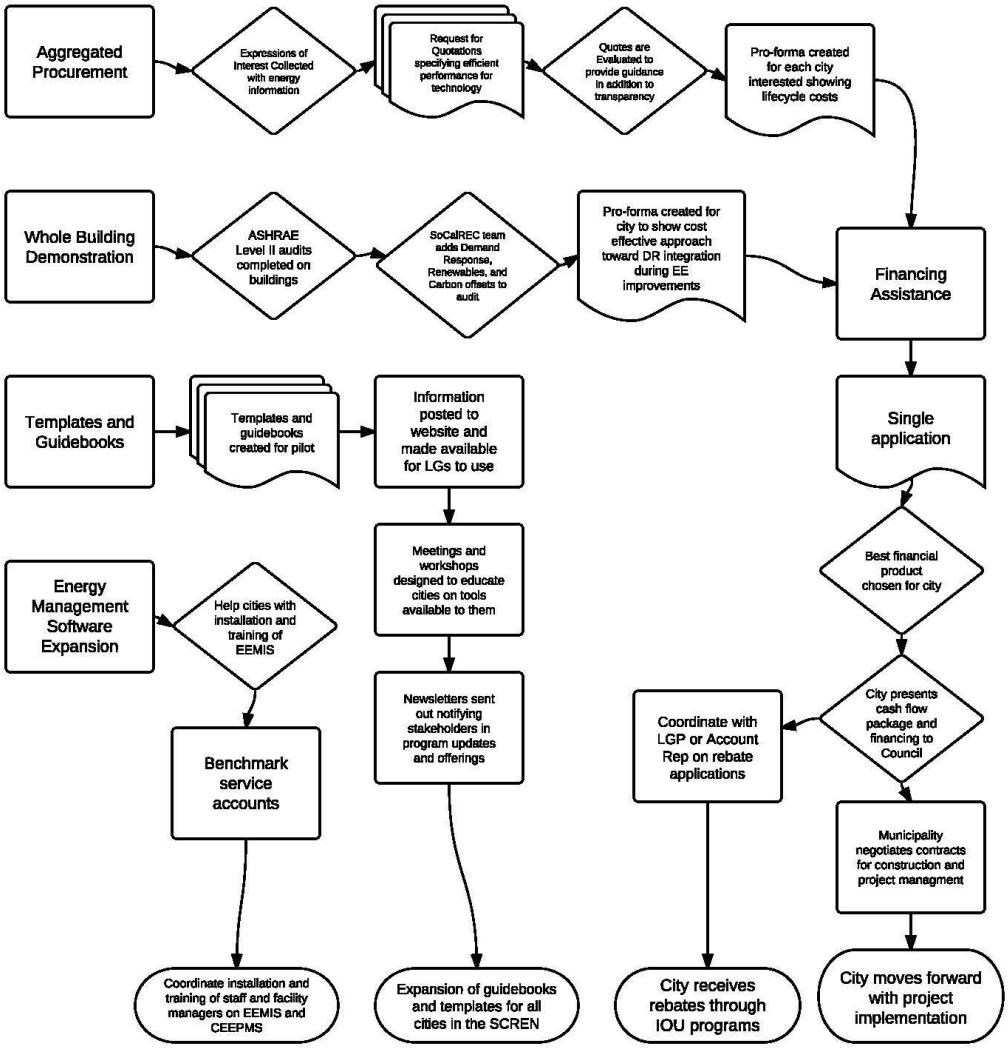


Figure 28 (Subprogram C) cont.: SoCalREC Flow Charts



n) Cross-cutting Sub-program and Non-IOU Partner Coordination: Indicate other IOU EE, DR or DG sub-programs with which this sub-program will regularly coordinate. Indicate also key non-IOU coordination partners. Indicate expected coordination mechanisms[34] and frequency[35]:

Table 15 (Subprogram C): Cross-cutting Sub-program and Non-IOU Partner Coordination

Subprogram C: SoCalREC Portfolio		
Other SoCalREN Subprograms	**Coordination Mechanism**	**Expected Frequency**
Energy Upgrade	Project referrals	All potential projects
Financing	Project referrals	All potential projects
IOU Program Name	**Coordination Mechanism**	**Expected Frequency**
IOU Whole House Upgrade Program (Energy Upgrade California)	Meetings, communication, participating contractor and QA updates	At least bi-monthly
IOU On-Bill Financing	Meetings	Ongoing, as needed
Local Government Partnership programs	Meetings	Ongoing, as needed
IOU Savings by Design	Savings by Design is a program to encourage high-performance nonresidential building design and construction within the service territories of PG&E, SDG&E, Southern California Edison, or Southern California Gas. The program offers building owners and their design team a wide range of services including design assistance, owner incentives, and design team incentives. Owners and design team members are eligible to participate.	As needed.
IOU Demand Response Programs	IOU DR Programs help qualifying customers reduce their energy usage during peak times while lowering their electricity costs. When electricity demand exceeds supply, when electricity costs are high, or when the state's electrical system is constrained, SCE requests (and pay for) participating customers to help by reducing their electricity use. Various DR Programs, Rates and Offerings are available.	

[34] "Mechanisms" refers to communication methods (i.e. quarterly meetings; internal list serves; monthly calls, etc.) and/or any cross-program review methods (i.e., feedback on program plans; sign off on policies, etc). or harmonization techniques (i.e. consistent certification requirements across programs, program participant required cross trainings, etc).

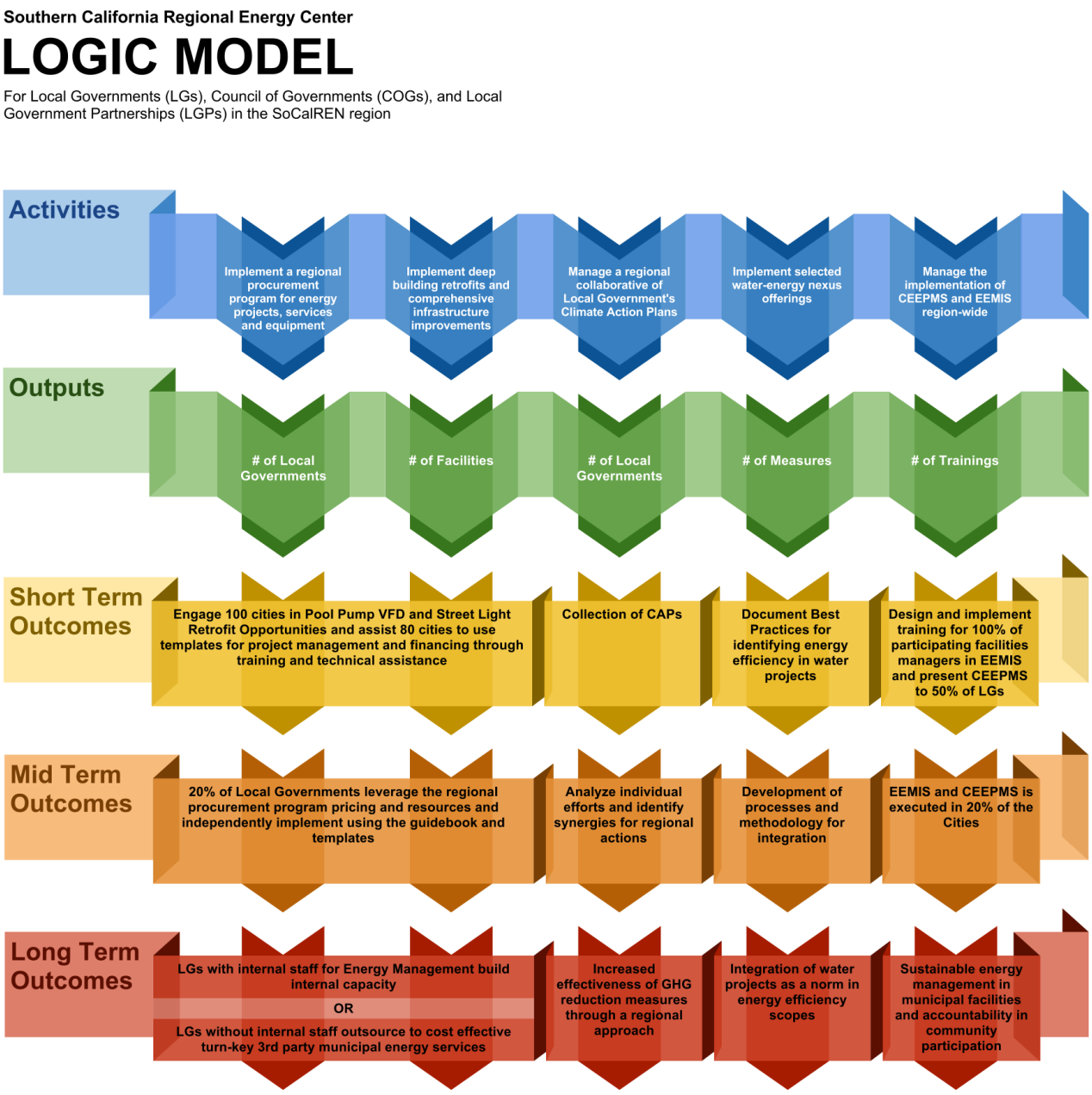
[35] This does not mean there would be mutual understanding of the on the mechanism or a known frequency of coordination; rather, just provide enough information to give a general sense of the coordinate efforts.

California Independent System Operator (ISO)	Demand Response & Proxy Demand Resource (6/24/11) The Proxy Demand Resource product allows end-use customers to work through a Demand Response Provider to bid demand response services directly into the CAISO markets. All resources types are offered into CAISO markets through a Scheduling Coordinator. Thus, to bid proxy demand resources into the CAISO markets, a Demand Response Provider must be a Scheduling Coordinator or hire the services of an ISO certified Scheduling Coordinator to submit bids and schedules on their behalf.	As needed.
Coordination Partners Outside CPUC	**Coordination Mechanism**	**Expected Frequency**
Lenders	Meetings, communication	Ongoing, as needed.
Local Financing Programs	Meetings, communication	Ongoing, as needed.
California Commissioning Collaborative (CCC)	The Toolkit includes: ● Energy Savings Calculation Tools ○ Building Optimization Analysis Tool ○ Pumping System Workbook ○ Fan System Workbook ● Data Analysis Tools ○ Energy Charting and Metrics Tool ○ Utility Consumption Analysis Tool ○ Findings Workbook	As needed.
Consortium for Energy Efficiency (CEE)	State and Local Government Purchasing Initiative: The CEE has conducted extensive research on state and local government purchasing and has developed tools to assist government purchasing officials in procuring energy efficient products. The purchasing tools include: ● Procurement guidebooks ● RFP for contractor services ● Interview guide ● Toolkit training modules Energy efficiency training modules	As needed.
DOE's Federal Energy Management Program	Building Life-Cycle Cost (BLCC) program analyzes capital investments in buildings. BLCC conducts economic analyses by evaluating the relative cost effectiveness of alternative buildings and building-related systems or components. Typically, BLCC is used to evaluate alternative designs that have higher initial costs but lower operating costs over the project life than the lowest-initial-cost design. It is especially useful for evaluating the costs and benefits of energy and water conservation and renewable energy projects. The life-cycle cost (LCC) of two or more alternative designs are computed and compared to determine which has the lowest LCC and is therefore more economical in the long run. BLCC also calculates comparative economic measures for alternative designs, including net savings, savings-to-investment ratio, adjusted internal rate of return, and years to payback.	As needed.
DOE's Energy Efficiency & Renewable Energy Weatherization & Intergovernmental Program (WIP)	The U.S. Department of Energy (DOE) Weatherization and Intergovernmental Program provides grants, technical assistance, and information tools to states, local governments, community action agencies, utilities, Indian tribes, and overseas U.S. territories for their energy programs. These programs coordinate with national goals to reduce petroleum consumption and increase the energy efficiency of the U.S. economy. They aim at market transformation to reduce market barriers to the cost effective adoption of renewable energy	As needed.

	and energy efficiency technologies.	
Collaborative for High Performance Schools (CHPS)	The Collaborative for High Performance Schools provides tools, resources, education and building design standards and facilitate the design, construction and operation of high performance schools to create environments that are not only energy and resource efficient, but also healthy, comfortable, well lit, and containing the amenities for a quality education.	As needed.
Energy Technology Assistance Program (ETAP)	The Energy Technology Assistance Program (ETAP) provides technical support, implementation assistance, rebates, and training to accelerate the uptake of advanced, market-ready energy efficiency technologies in the local government market in California. The program focuses on three energy efficiency technologies: 1. Bi-level lighting controls 2. Wireless lighting controls 3. Wireless HVAC controls	As needed.
California Air Resources Board	The Cool California Local Government Toolkit helps to identify cost saving actions, financial resources, and case studies to assist local governments with achieving GHG emission reductions.	As needed.

o) **Logic Model:** Please append the logic model for this sub-program to the end of this PIP. Describe here any additional underlying theory supporting the sub-program intervention approach, referring as needed to the relevant literature (e.g., past evaluations, best practices documents, journal articles, books, etc.).

Figure 29 (Subprogram C): SoCaREC Logic Model



11) Additional Sub-Program Information

a) **Advancing Strategic Plan Goals and Objectives**: Describe how sub-program advances the goals, strategies and objectives of the California Long Term Energy Efficiency Strategic Plan (word limit: 150 words)

Figure 30 (Subprogram C): Strategic Plan Alignment

Local Government Goal 4: Community Leadership		
4-1	Local governments commit to clean energy/climate change leadership.	By establishing SoCalREC, local governments will establish a more dynamic regional energy efficiency infrastructure, with benefits that similarly support the sustainability and climate change objectives of local governments.
4-4	Develop local projects that integrate energy efficiency, DSM, and water/wastewater end uses	By structuring its Program to address the water-energy nexus, and to provide incentives and opportunities for commercial, residential, and agricultural players, SoCalREC integrates multiple goals and objectives identified by the Strategic Plan.
Local Government Goal 5: Local Government Energy Efficiency Expertise		
5-1	Create a menu of products, services, approved technologies and implementation channels to guide local governments that currently lack deep expertise in energy efficiency	SoCalREC is being effectively implemented during this current calendar year to provide local governments with support and options, including a menu or products and services that will further energy efficiency.
5-2	Develop model approaches to assist local governments participating in regional coordinated efforts for energy efficiency, DSM, renewables, green buildings, and zoning.	SoCalREC is being effectively implemented during this current calendar year to provide local governments with support and options, including a menu or products and services that will further energy efficiency.

b) Integration

i. **Integrated/coordinated Demand Side Management**: As applicable, describe how sub-program will promote customer education and sub-program participation across all DSM options. Provide budget information of non-EE sub-programs where applicable.

This program is designed to bring all of its energy savings through the IOU DSM portfolio including, but not limited to: express and customized solutions, on-bill financing, on-bill repayment, and other core utility programs. The design of the SoCalREC program is aimed at aggregating groups of local governments

together for implementation of energy efficiency measures, such that cities will feel more comfortable in minimizing their risk.

However, without an incentive to pay the municipalities for their actions, the SoCalREC team will funnel all projects through the Local Government Partnerships, where applicable, and through Southern California Edison and Southern California Gas Company's Account Representatives, to help those cities qualify for and obtain as many eligible rebates in the DSM programs as possible.

Table 16 (Subprogram C): Non-EE Sub-Program Information

Non-EE Sub-Program	Budget	Rationale and General Approach for integrating Across Resource Types
On-bill financing	TBC	SoCalREN will assist local governments with OBF-eligible projects with the application and technical processes for obtaining OBF
On-bill repayment	TBC	Same as OBF
California Solar Initiative TBC	TBC	Local Governments that wish to include solar or solar thermal in their building or system retrofits will be assisted with technical calculations and assistance with applications. Furthermore, aggregated solar projects across municipalities may be considered during the period of performance for this pilot.
HVAC Optimization	TBC	Cities that have package units are great candidates for this program, and the SoCalREN team can help the local governments with technical calculations as well as help them find a service provider.
Demand Response	TBC	Demand Response assistance will be available to all cities in the REN. Involving DR conversations and analysis on a municipal-wide level can help the city curtail more peak KW and earn income by participating in a variety of programs offered.
Savings by Design	TBC	SoCalREN can assist cities with program knowledge as well as providing technical assistance and project management assistance as municipal buildings make their way through this program

ii. **Integration across resource types** (energy, water, air quality, etc): If sub-program aims to integrate across resources types, please provide rationale and general approach.

Non-EE Sub-Program	Budget	Rationale and General Approach for integrating Across Resource Types
Water agency coordination	TBC	Link water efficiency to energy efficiency for cities by participating in water-reduction rebate programs as well as community education of both resources
Focus on VFD installations	TBC	Pool pump VFDs save energy but, VFDs on other city water pumps can save both energy and water. Including well pumps measures in the aggregated projects, while coordinating with the water departments, successfully links the two scarce resources.

c) **Leveraging of Resources**: Please describe if the subprogram will leverage additional investments by market actors or other state, local or federal agencies.

The SoCalREC program has leveraged all of the work done in the previous SoCalREC program using SCE Flight 5.6 funds and U.S. Department of Energy Energy Efficiency and Conservation Block Grant (EECBG) funds. These funds helped the local Southern California team to establish the aggregated procurement process, the demonstration project schedules and timelines, relationships with a variety of cities within both LA County and Orange County that are primed to implement energy efficiency measures already discussed, and templates and guidebooks already drafted and posted.

This iteration of the SoCalREC program leverages existing resources and opportunities created in the current SoCalREC pilot and expands upon that model to cover a six-county region, allowing more cities and other public agencies to take advantage of the project management, procurement, and implementation advantages that have been established this year.

The SoCalREC program will leverage the Local Government Partnership administration and technical assistance dollars, when applicable, and any other existing resources that are available to help municipalities with retrofits including: EEMIS, CEEPMS, EPA Portfolio Manager, and prof-forma calculators which calculate lifecycle and cash flow impacts for cities to make decisions on green-lighting projects.

A variety of other programs and funding is available to help the SoCalREC program achieve its success. Please see Exhibit C4, Resource Plan.

d) **Trials/ Pilots:** Please describe any trials or pilot projects planned for this sub-program
This program will include 4 pilot efforts:

a. Education and guidance assistance of streetlight purchase from IOUs including RCNLD analysis, decoupling, and rate tariff revisions
b. Assistance of Series 6.6 re-circuiting from series to multiple circuits
c. Integration of Demand Response in conjunction with, ASHRAE Level II audits, to see if more curtailment strategies can be implemented if discussed and planned as part of energy efficiency planning.
d. Inclusion of additional public agencies to analyze the differences in needs and outcomes

e) **Knowledge Transfer:** Describe the strategy that will be used to identify and disseminate best practices and lessons learned from this sub-program

f. Case studies developed and disseminated
g. Assist public agencies with policy changes aimed at setting up a revolving account and take a portion of saved funds to pay for a high profile project/highlight success
h. Highlight major success stories through media
i. Draft news and journal articles on city energy savings
j. Presentations and participation in conferences to share success/best practices/lessons learned

Please see Exhibit C2 for sample collateral such as newsletters, website screen shot, etc.

12) **Market Transformation Information**: For programs identified as market transformation programs, include the following (suggested page limit- five pages):

ii. A summary of the market transformation objectives of the program.
iii. A description of the market, including identification of the relevant market actors and the relationships among them;
iv. A market characterization and assessment of the relationships/dynamics among market actors, including identification of the key barriers and opportunities to advance demand side management technologies and strategies;
v. A description of the proposed intervention(s) and its/their intended results, and specify which barriers the intervention is intended to address;
vi. A coherent program, or "market," logic model that ensures a solid causal relationship between the proposed intervention(s) and its/their intended results[36];
vii. Appropriate evaluation plans and corresponding Market Transformation indicators and Program Performance Metrics based on the program logic model.

Not applicable.

13) **Additional information as required by Commission decision or ruling or as needed:** Include here additional information as required by Commission decision or ruling (As applicable. Indicate decision or ruling and page numbers):

Exhibit C1: Tables

Exhibit C2: SoCalREC collateral

Exhibit C3: Logic Model

Exhibit C4: Resource plan

Exhibit C5: SoCalREC E3 calculations – Due to file size, please download at:

https://drive.google.com/folderview?id=0B-geqhnadhYHLUR6dEVMRVZMVkE&usp=sharing

Exhibit C6: List of Subprogram C Figures

[36] If this logic model is the same as that requested in #10.(O), only provide once. As needed, provide a more detailed logic model emphasizing the market transformation elements of the program and/or how such elements integrate with resource acquisition elements.